

# NDLERF

## Alcohol, assault and licensed premises in inner-city areas

Alan R Clough, Charmaine S Hayes-Jonkers, Edward S Pointing

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# Alcohol, assault and licensed premises in inner-city areas

*Scoping studies and baseline data collection for an evaluation of best-practice policing interventions augmented by collaboration with emergency medicine and local community agencies to reduce alcohol-related assault*

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# Overview of this report

This report contains eight linked feasibility studies conducted in Cairns during 2010. These exploratory studies examine the complex challenges of compiling and sharing information about incidents of person-to-person violence in a late night entertainment precinct (LNEP). The challenges were methodological as well as logistical and ethical. The studies look at how information can be usefully shared, while preserving the confidentiality of those involved. They also examine how information can be compiled from routinely collected sources with little or no additional resources, and then shared by the agencies that are providing and using the information.

Although the studies are linked, they are also stand-alone and so can be published in peer-reviewed literature. Some have already been published, or are 'in press' or have been submitted for review. Others require the NDLERF board's permission to be published as they include data related more directly to policing, or they include information provided by police.

The studies are incorporated into the document under section headings. In each section, they are introduced and then presented in their final draft form. The final published form of each paper, however, is likely to be different from the draft because of journal and reviewer requirements. The content, results and implications of each study are discussed in summaries included in each section. The sections and the studies included in them are:

## 1. Engaging with the emergency department

### Study 1

Is it worth emergency departments recording information about alcohol-related assault occurring in inner-city, LNEPs?

This study has been published in the journal *Emergency Medicine Australasia*

## 2. Data from the emergency department

### Study 2

An exploratory study of the occurrence and severity of injury due to assault in a tropical tourist town in Far North Queensland, Australia.

Not yet published

### Study 3

Challenges for collecting injury surveillance data from patients presenting to the emergency department in a North Queensland city.

Not yet published

## 3. Methodology

### Study 4

Defining the LNEP and possible strategies for reducing alcohol-related assault: an example using a community-based methodology in Cairns, Far North Queensland (Australia).

Not yet published

### Study 5

The 'Cairns model': compiling information prospectively about violent incidents in the LNEP in a regional centre in Far North Queensland (Australia).

Not yet published

## 4. Potential roles for others: CCTV

### Study 6

The role of an open-space CCTV system in limiting alcohol-related assault incidents and injuries in a LNEP in a tropical Queensland city, Australia.

This study has been published in the journal *Injury Prevention*. In addition, but not included in this report, is a realist evaluation of the CCTV system in Cairns as a model of best practice, which has been accepted for publication in the journal *Crime Prevention and Community Safety*.

## 5. Potential roles for others: venue security

### Study 7

Strategic and operational good practice for private security in a night-time economy, the example of Cairns in Far North Queensland (Australia)

This paper has been accepted for publication in *The Security Journal*. In addition, but not included in this report, is a commentary on the skill development needs of security personnel working in the LNEP. This has been published in the journal *Crime Prevention and Community Safety*.

## 6. Design elements for a PILOT intervention trial

### Study 8

A mixed-methods approach to designing, implementing and evaluating community-level strategies to reduce alcohol-related violence in the LNEP in a regional centre.

Not yet published

## 7. Discussion and conclusions



# Contributing authors

This document depended on the input from the following authors, who made contributions to each of the studies as summarised in the following table.

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# Acronyms and abbreviations

<b>ARA</b>	alcohol related assaults
<b>ATOD</b>	Alcohol, Tobacco and Other Drugs
<b>CBD</b>	central business district
<b>CBH</b>	Cairns Base Hospital
<b>CCLSA</b>	Cairns City Licensee Safety Association
<b>CCTV</b>	closed circuit television
<b>CRC</b>	Cairns Regional Council
<b>CSC</b>	Community Safety Committee
<b>DABIT</b>	Drug and Alcohol Brief Intervention Team
<b>ED</b>	emergency department
<b>EDIS</b>	Emergency Department Information System
<b>JCU</b>	James Cook University
<b>LNEP</b>	LNEP
<b>MOU</b>	Memorandum of Understanding
<b>NTE</b>	night-time economy
<b>OFT</b>	Office of Fair Trading
<b>QAS</b>	Queensland Ambulance Service
<b>QPS</b>	Queensland Police Service
<b>QSP</b>	Queensland Security Providers
<b>RTO</b>	registered training organisation
<b>SIMS</b>	Security Incident Management System
<b>UK</b>	United Kingdom

## Executive summary

Some evidence suggests that reducing the number of alcohol-related assaults in LNEPs cuts the number of emergency department (ED) presentations. It is widely recognised that data from the ED is a better measure of violence in the community than police statistics. Study 1 discusses whether it is worth EDs and their personnel spending time and effort to collect this information. The conclusion is that, while rapid and skilful triage of patients for treatment will always be the ED priority, and although many of its personnel are willing to help provide this information, appropriate and dedicated resources are needed to ensure no additional burden falls on busy staff.

Around one-quarter of injuries in the large regional centre of Cairns that result from violence and require treatment in the ED at Cairns Base Hospital can be linked with the LNEP. Study 2 shows that just over 60 percent of presentations tend to be from suburban Cairns. In Cairns as a whole, the available information suggests that alcohol is involved in most injuries caused by violence. Around two-thirds of patients had at least one record of a previous admission due to assault and around three quarters of the patients were Cairns residents. Overall, much of the violence addressed by police and leading to injuries presenting to the ED in Cairns occurs in the suburbs. Including the LNEP, it is mostly Cairns residents suffering violent injuries who present to the ED.

Using a violence surveillance system in a city like Cairns potentially can be useful to assess the overall impacts of intervention strategies. Using retrospective data from the ED by searching electronic records and patient files can, however, be impracticable and produce incomplete information, as Study 2 suggests. Compiling information from patients prospectively also leads to incomplete information, which cannot be relied on for surveillance. Response rates of well below 50 percent, as in Study 3, are not useful.

To be meaningful and accurate, a surveillance system that monitors violence in the LNEP requires a clear definition of the area under surveillance so that any temporal changes can be compared for the same area over time. Study 4 shows that the LNEP is a place-specific concept among key Cairns agencies with most people agreeing about the location of its core, and about the sites that are more problematic for violence. Some variability, however, exists at the margins and between individuals with different experiences of the locality. Moreover, follow-up interviews suggest that, although generally stable over time for key Cairns agencies, the precise area of concern shifts as the nature of the violence and the participants involved change, making for a more dynamic set of circumstances to manage than was first thought in this regional city.

In Study 5 a surveillance system for incidents of person-to-person violence was developed and tried during three months (April, May and June, 2010). In the ED, clinicians and triage nurses flagged incidents believed to have happened in the LNEP, Queensland Police Service provided data on alcohol-related assault, Cairns Regional Council CCTV camera room operators described incidents of concern, and venue security reported incidents from mandated registers on licensed premises.

The results captured by the surveillance tool were consistent with local understandings and experiences and with the published evidence. This makes the tool potentially useful for monitoring and evaluating the effects of targeted intervention strategies if methodological shortcomings can be addressed. As outlined in Study 5, these include improved consistency in incident definition, and developing reliable indicators of the denominator, that is, the population 'at risk' of experiencing an incident in the LNEP.

Closed circuit television (CCTV) systems that incorporate real-time communication links between camera room operators and on-the-ground security may limit injuries resulting from alcohol-related assault. Study 6 examined CCTV footage and operator records of security responses. Camera operators were proactive, efficiently directing street security to assault incidents where they intervened in 40 percent of assaults in the LNEP, limiting possible injury.

Private security personnel are the guardians of patrons in the night-time economy. To achieve best practice, several training and regulatory issues need to be addressed including: duty of care, risk management approach to staff and patron care, code of conduct, interactions with other service agencies, data and information sharing, and incident reporting. Security personnel have considerable potential to help reduce alcohol-related harm and injury in the night-time economy through strategic and operational good practices. Study 7 found a favourable comparison between best practice and the practice model of security personnel in Cairns.

In a city like Cairns, Study 4 suggests that the following intervention components are possible but depend on a robust supportive network of stakeholders with an agreed focus. The components are:

- feedback of results as research or monitoring progresses, along with information and education with specific local content;
- situational interventions to better manage groups of people on the streets, featuring educational activities by health and alcohol and drug agencies;
- improved transport to enable quick and safe egress from the city;
- enhanced capacities to prevent incidents by improving security providers' skills and practice;
- enhanced provision of brief intervention for people with alcohol problems;
- enhanced collaboration between agencies providing victim support services;
- targeted joint operations between liquor licensing, police and emergency services;
- support for more proactive prevention by venue-based management, venue-based environmental changes and increased focus on responsible service of alcohol;
- awareness-raising among youth by key agencies, and
- a city-wide media strategy.

Requirements to enable effective intervention, and evaluation of the effects of strategies using a robust surveillance system include:

- clear definition of the target area;
- sound ways to repeatedly and comprehensively count and describe incidents of person-to-person violence in the target area;
- sound ways of estimating the population exposed to the risk of violence for the target area, and
- strong local coalitions of stakeholders capable of providing sustained support for intervention strategies.



# Introduction

## Key components of the study

The study's two core components focus on data about incidents of person-to-person violence. They show that it is:

- possible to routinely collect data using information about deliberately injured people who have sought treatment in a hospital emergency department (ED), and
- feasible to share the data about incidents with enforcement agencies and stakeholders for use in strategies to reduce further incidents in the LNEP.

A key requirement for the ED, police and collaborating community agencies is that this collection and sharing of information has minimal resource implications. Ideally data should be generated from routinely collected information or from routine practice with minimal intrusion or burden for service providers.

The study looks at the LNEP in the CBD. It also focuses on behaviour, as alcohol is a ubiquitous risk factor of the inner-city entertainment economy. It is normal for patrons to be intoxicated in this precinct, especially towards the end of the working week.

The requirements of the study appear simple but actually involved several major methodological and logistical challenges. These had to be surmounted before valid and useful data could be collected using existing resources, and then shared with interested agencies.

No research has attempted to do this until now.

## Challenges of collecting information

### *Treatment priorities in busy EDs are not generally compatible with public health research themes and approaches*

The life-saving priority for ED clinicians must always be rapid and effective triage of each patient into appropriate treatment. Collecting information about particular incidents leading up to any patient's injury will not usually be clinically relevant. On the other hand, clinical details of a patient's injuries are seldom of immediate importance in reducing violent incidents in the community. From a public health perspective, it is the incidents that occur overall, their number, where and when they happen and other characteristics that are of central interest when designing broader approaches to reduce the number and severity of violent incidents. Emergency medicine in Australia is only just beginning to embrace public health approaches to reducing injury, creating particular challenges in this study. This research and those who have become involved with it such as the ED clinicians in Queensland, particularly in Mackay and Townsville, are helping to lead the way in this field.

### *EDs have limited capacities and resources for research*

While many EDs are actively engaged in clinical research, few have staff with research skills or experience that can support research at the population level. The human resources needed to collect data outside the parameters of routinely compiled ED patient information are not usually allocated by hospitals. Few staff in EDs have research or data collection as their principal duty. For research to be based on information collected in the ED, external resources and a collaborative approach between researchers and ED clinicians are required. Research funding streams do not have the continuity needed to fund specific ongoing research positions in EDs. Such resources would need to be allocated within health systems. The limited resources

available for this study did not permit project research staff to be placed in the ED to collect data. It was not possible for investigators to collect data directly. Data collection for research in the ED therefore must be able to be done routinely with minimal or no burden on staff. Similarly, it must not detract from patient treatment.

## ***Protecting patient confidentiality and related information privacy considerations***

Identifying patients in injury prevention research in the ED is possible with informed consent from each patient. In studies like the ones reported here, however, resources available to allow interaction with ED patients were not available, even at just one study site in a single jurisdiction. It is impracticable to ask every patient's permission to collect relevant information in a project that seeks to monitor violent incidents and injury over any length of time. What is desirable is some kind of routine de-identified information collection from or about the incidents that are linked with or are the cause of ED patients' injuries. Human research ethics committees, however, may not accept and approve such information collection approaches given the possibility of identifying patients and the lack of informed consent. For clinicians, the routine attribution of any behaviours or activities during an incident in which a patient was involved, especially if illegal or stigmatised and if not a clinically relevant record, could lead to complaints from patients if they should become aware of, and concerned about, such a record. While trying to establish this study, we were alerted to the fact that ED patients have, in the past, taken offence at certain kinds of information, about possible alcohol problems for instance, being linked with their clinical records. Such possible repercussions for the ED make ED management rightfully cautious.

## ***Sharing ED data with enforcement agencies and other stakeholders***

We are aware of no protocols that make it possible to routinely share information with enforcement agencies about incidents involving ED patients. This study has managed to achieve de-identified information sharing among key stakeholders in one city. For clinicians, patient confidentiality is rightfully paramount. For police, the prosecution of violent offenders involved in incidents generally needs to be complaint driven. From the point of view of enforcement, unless an ED patient who is a victim of violence makes a complaint, then police have few grounds to try to find out anything about any incident using information from the ED. The same is true for any community-based service agency, such as those involved with victim support, whose clients may present with injuries or associated alcohol problems at the ED. While ED data may be a better measure of community violence because it deals with the consequences of violence, community service agencies with a core business of preventing violence, or supporting victims of violence, necessarily stand at a distance from and cannot directly use ED information.

## ***Emergency departments rarely seek information about the specific locations of violent incidents***

In a public health approach to reducing violence and injury, the location and time when incidents occur, the kinds of people involved and the environmental characteristics of an incident are all useful for designing population level and environmental intervention approaches. Such information, however, is rarely useful to a clinician treating a patient's injury. Even the patient's possible level of intoxication is often not of clinical importance. It is not often measured, unless the information is to be used in diagnosing an injury or informing treatment, a need which is assessed on a patient-by-patient basis. A study of incidents occurring in a specific area, such as the LNEP in a city's CBD, a very tiny part of most cities, requires very accurate and specific information about the location of a violent incident and related events. It also requires ED clinicians to know of such locations, and they may have diverse opinions and perceptions.



Put together, public health intervention research faces significant challenges using information available from the ED about small areas in the inner city.

## Research

To address these challenges adequately, the research in this report was developed and implemented as a series of smaller linked studies that focus on two objectives.

### Objective 1

The first objective was to find a way to compile data about incidents of alcohol-related violence in the LNEP, which could then inform the development, implementation and evaluation of programs and strategies to reduce this violence. A principal goal was to ensure that the information collection was not a data gathering exercise in itself, but collected meaningful information about alcohol-related violence linked to licensed premises in the LNEP that could reliably inform evaluation of programs and strategies. We set out to ensure that the information collected was:

- relevant to the nature and make-up of LNEPs;
- de-identified to protect the privacy of patrons of licensed venues and other services in the city;
- collected using routinely available information capture and reporting mechanisms to maximise the opportunities to sustain information collection beyond the study;
- gathered at little additional cost or intrusion to existing services or with no additional resources required, and
- shared across community agencies whose core business it was to use the information strategically to address the issue of alcohol-related violence in the LNEP.

These criteria are particularly exacting for researchers. They hold significant implications and challenges, which are both methodological and pragmatic.

### Objective 2

The second objective of the study was to examine the feasibility and acceptability of collaborative approaches to addressing alcohol-related violence occurring in the LNEP. This involved a more qualitative research strategy involving close engagement and collaboration with community agencies and key stakeholders.

## Report presentation and structure

The reader of this report will see separate but linked studies or commentaries, most of which have been prepared for submission to a range of peer-reviewed journals. Some of them have been submitted and are under review or published in journals. Since each publication, or section of this report, is prepared with a view to addressing the five criteria in Objective 1, each section includes an introduction describing the background of each study, its intended purpose and how it attempts to address the five criteria for gathering information.

The introductions to each study illustrate the research processes and rationale followed in individual studies. This combination of process and outcome data is intended to form a coherent picture of how the study overcame the challenges to information collection at each stage, how the key stakeholder groups and service agencies were engaged to do this, and how to interpret the results of the data.

A summary of each of the sections of the report follows.

## *Engaging with the emergency department*

In this section, we describe the preliminary work done and discussions held with the ED in Cairns to establish the study protocols and relationships needed to access and compile relevant data from the department. This was a crucial stage of the project as it questioned the utility and significance of collecting this kind of information. Because of this, we decided to jointly publish a commentary, in collaboration with ED personnel, addressing the value and relevance of collecting information in the ED about alcohol-related assault. This commentary demonstrated the collaborative links established between the research team and ED personnel, links which remain in place and which have strengthened.

## *Data from the emergency department*

We investigated and tried different approaches to compiling information from the ED in this new collaboration with ED personnel. Interested staff led this component of the research. Before information could be collected from this source, considerable time was needed to establish sound relationships and to demonstrate to ED personnel that the research was useful and did not require extra resources.

Two studies are included in this section. Two colleagues (ED registrars) prepared a draft publication examining the patterns and severity of assault using existing data from hospital patients' paper medical records. A summary report was also prepared describing attempts to collect alcohol-related violence data in the ED on a prospective basis using a self-completed questionnaire delivered at triage for patients in the waiting room.

## *3. Methodology*

### **Quantitative methods**

Several methodological issues needed addressing in order to rigorously evaluate strategies to reduce the number of incidents of alcohol-related violence in LNEPs. First, we needed to be able to reliably identify an incident of alcohol-related assault, and measure (count) events of interest repeatedly and in the same way for as long as we remained interested in evaluating the effects of strategies to reduce the violence. An ideal quantitative yardstick of the success, or otherwise, of an intervention strategy to address this particular problem would be a validated measure of the rate of occurrence of incidents, that is, a truthful indicator of the number of events occurring over a period of time in the population that is at risk of injury. While it may seem simple to think that all we needed to do was count the events of person-to-person violence as they happened in the night-time economy, several definitional questions needed to be answered before we could be sure of doing this accurately and reliably.

How is an incident of person-to-person violence to be defined? Two people, intoxicated or not, may have a vigorous exchange of words outside a nightclub or engage in some energetic shoving without coming to blows. Should this be defined as an incident of interest? Perhaps it counts if it becomes a matter that is squared up later in the evening, in which case, should it be then counted as two incidents or just one? Groups of young men may engage in a series of physical clashes in different localities in a LNEP throughout an evening. How do we count these, and if we could how would we know if they were intoxicated? How many incidents should be counted where a number of individuals are involved? One for the whole series of incidents, one for each clash, or one for each of the people involved? How is it possible to routinely determine whether intoxication due to alcohol was a factor? How important is it to distinguish between alcohol-related violence in the LNEP and other nearby incidents, or incidents that occur on the transport routes to and from the area, given that late night entertainment environments, almost by definition, feature alcohol as a ubiquitous risk factor. These are all definitional problems related to incidents themselves.

There are also issues with the population denominator. Assuming we could count the incidents accurately (numerator) we would be able to compare the incidence rate in one period with the rate in another or between two localities if, as well as the number of incidents being clearly defined, the number of people exposed to the

possibility of being involved in an incident for each period could also be measured. Estimating the population in a LNEP is very difficult as it changes rapidly during the day and the week. It fluctuates between the end of the working week and other times, and also over short periods during any evening as crowds ebb and flow.

Defining the area covered by any LNEP is subject to different viewpoints, knowledge and experience. Consequently, relating incidents counted to a locality as specific as a LNEP may also be challenging if reliable information about the location of their occurrence cannot be obtained.

## Qualitative methods

Taking account of different viewpoints regarding the nature of the LNEP and its locality requires more qualitative methods and approaches. Also, to examine the feasibility and acceptability of collaborative approaches to addressing alcohol-related violence occurring in the LNEP requires qualitative methods that seek the views of key agencies responsible for addressing the issue. The methods used were embedded in a participatory action research framework in which the research team engaged closely with Cairns agencies and stakeholders. During the study, research results were progressively fed back to ensure continuous improvement in the quality of the data being compiled. This process has been shown to be an important factor in research addressing ARAs in the LNEP (Holmila et al.2008).

## 4. Potential roles for others: CCTV

A significant discovery in the study was the capacity of the Cairns closed circuit television (CCTV) and street security to detect and document incidents of person-to-person violence in the inner city. Camera room operations and street-based security working together around the clock, created a considerable capacity to collect relevant information to augment that from the ED and police. Direct observation in the camera room during the study showed that street security routinely intervened in potentially violent incidents either by quelling the violence or preventing incidents from becoming violent in the first place. It was also observed that street security intervened to limit the potential harms caused by violence. This system holds significant potential for improving the effectiveness of enforcement and safety. Part of the research focused on compiling evidence to describe the impact of this approach to enhancing patron security in the LNEP.

## 5. Potential roles for others: venue security

Views are mixed about the role and effectiveness of venue security providers in the late night entertainment economy generally. In Cairns, venue owners and their contracted security services have collaborated with other key stakeholders in the city and have supported this study by collecting relevant information about violent incidents occurring particularly on licensed premises. This study investigated the capacity of venue security for enhanced collaboration. It also assessed the needs for skill development with a focus on preventing violence, and refining the current model of practice.

## 6. Design elements for an intervention trial

The community-based, participatory action-research approach we took in this study was in large measure a key to successfully demonstrating that it is feasible to collect strategically useful information about person-to-person violence in the LNEP. Cairns already had sound collaborative structures and an established history of stakeholders working together targeting community safety overall. The research became part of this collaboration through feedback to stakeholders and engaging in relevant forums. This engagement and feedback was resource intensive. With these essential tools in place it has been possible to broker a trial of further community agency efforts to address this violence and to extend the trial and data collection mechanisms to other tropical North Queensland cities, namely Mackay and Townsville. The trial is using a mixed methods approach. The design for the trial is documented in this section.

## 7. Discussions and conclusions

The principal results of the study are summarised in this section. It also includes a description of some of the project outputs including community-based initiatives that emerged during, and as a result of, the work.

### Development from concept

This research took some time to establish and implement, passing through several phases of negotiation and re-design before finally being implemented. It was also adapted while in train when its feasibility was demonstrated and the study moved to a pilot intervention trial in Cairns. The principal steps and events at each stage are outlined in the following table.

Year (month)	Event or milestone
2005 (November)	Initial project concept submitted to NDLERF for a study in Darwin
2006 (September)	Project headquarters moved from Darwin to Cairns
2007 (September)	NDLERF requests modified study in four jurisdictions
2008 (February)	NDLERF requests a one-year study in two or three jurisdictions
2008 (August)	NDLERF advised initial interest indicated by health authorities
2008 (December)	NDLERF contracts James Cook University for a one-year project
2009 (February)	Ethics application to Northern Territory Health/Menzies Human Research Ethics Committee (HREC)
2009 (March)	Ethics approval to conduct study in Darwin received
2009 (January)	Ethics application to Cairns and Hinterland HREC
2009 (April)	Ethics approval to conduct study in Cairns received
2009 (August)	Project officer recruited—data collection starts in November 2009
2009 (October)	Chief Investigator reports slow progress in initiating the study
2010 (March)	Chief Investigator meets NDLERF Board in Adelaide
2010 (May)	NDLERF requests re-scoping of study to Cairns site only
2010 (April-June)	Surveillance system established and baseline trial started
2010 (December)	NDLERF component of study ends
2011 (June)	Final draft report submitted to NDLERF—modifications requested
2011 (September)	Final report submitted to NDLERF

# 1. Engaging with the emergency department

## Introduction

The idea for the study was first broached with the Head of the ED at Cairns Base Hospital early in 2008. The ED was becoming increasingly interested in being involved in research, and so welcomed the idea for the study. At no stage did researchers have direct access to the information available from the various possible sources in the ED. For obvious privacy reasons the Emergency Department Information System (EDIS) could not be directly accessed by other than authorised personnel. The researchers also did not have access to nursing triage notes for the same reasons. The injury surveillance tool available in most Queensland hospitals was installed at the Cairns EDIS site but was not turned on and therefore was not used in during this study. Paper patient records were not directly accessible to researchers and the prospect of the researchers conducting interviews with patients in either the ED waiting room or treatment rooms was not consistent with the need for de-identified data to be collected on a routine basis for this study.

In addition to these limitations is the question of the health system resources required to conduct the research. In Queensland, health sites participating in research are required to recover the cash and in-kind costs for staff time and other resources used for research. All of these issues created significant resource implications for the study, which begged the question: is it worth trying to collect information about alcohol-related assault in the LNEP? All data collection in this study depended entirely on the goodwill, cooperation and in-kind contribution of the ED personnel. To address the crucial question of resources needed for this kind of research, we invited colleagues at the Cairns Base Hospital ED to co-author a brief discussion in the journal *Emergency Medicine Australasia*, which has now been published. The text of the published manuscript is as follows.

## Study 1

### ***Is it worth emergency departments recording information about alcohol-related assault occurring in inner-city, LNEPs?***

A significant proportion of presentations to hospital EDs in Australia are caused by alcohol-related assaults in inner-city, LNEPs, with significantly more occurring during weekend peak periods (Poynton et al. 2005). To reduce this kind of violence, both the Queensland Parliamentary Inquiry into Alcohol Related Violence (Legislative Assembly of Queensland 2010) and the *National Preventative Health Strategy* (NPHT 2009) urge more comprehensive data collection to document numbers and types of incidents, with both looking to EDs to provide this data. In a pilot study in Cairns, Far North Queensland, we attempted to document all incidents of alcohol-related assault in the inner-city during April, May and June (2010) to inform Cairns agencies implementing community-based and regulatory interventions.

Using 29 stakeholder interviews, the city's LNEP was first defined and mapped. It covered an area of about 0.62 km, and included taxi ranks and other transport nodes, pedestrian egress routes, open spaces where patrons congregated and several named violence 'hotspots'. The area had 26 premises licensed to sell liquor after midnight.

Training and information sessions were held with ED staff, and they were provided with maps of the defined area. A software project was linked to the Emergency Department Information System to de-identify presentations. For ICD10 injury categories (for patients aged 16 and over) triage nurses were asked to type 'CBD' in the 'presenting problems' screen, and clinicians were required to answer 'yes/no/unsure' to a short

automated question at the 'diagnosis screen' if they believed the presentation was linked to an alcohol-related assault in the defined inner-city area. De-identified data provided by licensed venue security staff, Cairns Regional Council open-space CCTV system and the Queensland Police Service were matched with ED data to reduce double counting.

For 282 presentations the patient's injuries were, in the view of ED clinicians, linked with an alcohol-related assault in the Cairns LNEP. This is around 97 presentations a month, representing 67 percent of the total of 486 alcohol-related assault incidents recorded by the four agencies combined. For a further 59 presentations, information was not available to confirm the location of the incident or the role of alcohol.

Our pilot study appears to have efficiently and effectively detected alcohol-related assault in the Cairns LNEP. Compare this with unpublished data from a retrospective chart audit that found 554 alcohol-related assaults in the Cairns region between 1 July and 31 December 2009. Only 55 of these, less than 10 presentations a month, could be reliably situated in inner-city Cairns. Importantly, the prospectively-collected pilot study information required fewer resources, with ED staff reporting little or no interruption to triage or patient treatment.

The question is whether it is worth even this small effort when the priority in the ED must always be rapid and skilful triage of patients into appropriate treatment.

Strong evidence exists which suggests that lowering the number of alcohol-related assaults in LNEPs reduces the number of ED presentations. Our pilot study shows that information to monitor such changes can be collected and shared at minimal cost. The Cairns pilot study information has already been used to inform targeted intervention strategies. Although they are not mandated to collect such data, if ED clinicians decide it is worth contributing information and ideas in this important area of public health and community safety, then resources will be required to support ED clinicians to:

- improve the criteria used to identify alcohol-related assault and to more precisely describe the locations where these incidents occur;
- compile the information, and
- share the information with front-line agencies and city authorities that do have the mandate to directly address the issue in the local community.

We believe this will have positive impacts on workload and staff safety.

## 2. Data from the emergency department

### Introduction

The small published study reported in Section 1 demonstrated the close relationship developed between the researchers and ED personnel. It summarised the early data available to us from the ED. It also referred to the establishment phases of a successful data collection process, with the potential to collect useful data about the nature of alcohol-related violence in the Cairns LNEP. It signalled the need to improve ways of capturing better information about incidents of person-to-person violence, the need for more precise determination of the location of an assault and the role of alcohol in the assault.

While this publication was being prepared, we collaborated with ED personnel to investigate alternative approaches to collecting data from the information available in the ED. As part of this effort we tried to improve the collection of information about assaults that appeared to have occurred in the CBD including the nature and seriousness of the incidents.

Two ED registrars working in collaboration with the investigators and using the ethics approval in place for the study, retrospectively examined the patterns and severity of assault using data compiled by hand from hospital patients' paper medical records.

We were disappointed to find that information describing the location of an assault was available in just a small proportion (37%=190/507) of all assault episodes in patients presenting to the ED. This limited the usefulness of data collected retrospectively from chart review.

### Study 2

***An exploratory study of the occurrence and severity of injury due to assault in a tropical tourist town in Far North Queensland, Australia.***

### Introduction

Interpersonal violence and injury linked with alcohol misuse is currently of considerable government and public concern (Ministerial Council on Drug Strategy 2006). In 2008 170,277 assaults were recorded in Australia (AIC 2010), resulting in significant costs to health care and enforcement. Although 79 percent of non-fatal assaults are not reported to police (Ministerial Council on Drug Strategy 2006), 95 percent of those requiring treatment for injuries present to EDs (Shepherd et al. 1993). ED data is recognised as a more accurate measure of this kind of violence in the community (Sutherland et al. 2002; Shepherd & Sivarajasingam 2005).

Research generally indicates that assault victims tend to be young men (Fothergill & Hashemi 1990; Warburton & Shepherd 2006), who are intoxicated at the time (Hedeboe et al. 1985), often late at night towards the end of the week, and who go on to be repeatedly involved in episodes of interpersonal violence (Fothergill & Hashemi 1990; Sims et al. 1989). Female victims present throughout the week (Hedeboe et al. 1985), and are more likely to be assaulted at home by someone they know (Young 2003), and are less likely than men to require hospital admission (Fothergill & Hashemi 1990). Similar research in Australia has been conducted outside the capital cities with studies focused on specific populations (Williams et al. 2002), or injury patterns (Smith et al. 2006). Researchers in the United Kingdom (UK) have found that increased exposure to alcohol increases the risk of an injury, and the injury severity. Little systematic information is

available about the severity of injuries caused by alcohol-related violence. Moreover, the recording of alcohol's role in injuries generally is usually not systematic or complete, and faces considerable challenges.

With no prospective information collection systems in place, this study retrospectively searched ED records at the Cairns Base Hospital (CBH). It looked for information to describe the number of assaults, their patterns, and the severity of the patient's injury, together with information describing factors possibly associated with injury severity. These included:

- the time of day and day of the week the assault occurred;
- any role of alcohol in the assault;
- age and gender of the patient;
- the location and type of environment where the assault occurred;
- whether the patient had been admitted previously for an assault-related injury;
- any weapon used;
- characteristics of the assailants;
- whether police were made aware of the assault, and
- the outcome for the patient.

## Methods

### Setting

Cairns has a population of around 160,000 and is a popular tourist destination for overseas and domestic travellers. The 330-bed CBH is the major referral centre for far northern Queensland and the provider of outreach specialist services to rural and remote areas. Services include most major specialties, although of importance for this research, neurosurgical and cardiothoracic surgery are not available, necessitating transfer of serious head or thoracic injury to a tertiary facility.

CBH has the sole ED serving the city, with around 45,000 attendances a year. Several hospitals are located in surrounding smaller towns that have limited resources and equipment, and which refer selected patients to Cairns for further imaging and management. Cairns is not one of the cities involved in the current Queensland trials of 'Drink Safe Precincts'.

### Hospital record search

The resources available for this pilot study permitted examination of up to six months of records of potential assault related presentations to the hospital's ED. With perhaps 5 percent of 45,000 attendances being violently assaulted, equivalent to around 2,250 attendances per year, a total sample size of approximately 700 required retrospective searches of hospital records over a minimum four-month period. A sample size of 700 allows comparisons of a difference in proportions of +/- 15 percent between two groups distinguished in the sample with adequate statistical power (80%,  $\alpha=0.05$ ). When the data collection started in early 2010, coded records were available on the EDIS for the six months from 1 July 1 to 31 December 2009. The only records examined were for adult patients (more than 18 years) presenting as a result of potential, non-sexual interpersonal violence. Sexually assaulted patients were excluded from the study, because of a different underlying social pathology.

### Data collection

Patients were identified by researchers examining each day's presentations on EDIS. Case notes were requested from the hospital records department for patients with any record in triage notes of having been assaulted, or with patterns of injury suggesting assault. On review of case notes for these patients, those who did not meet the above criteria were excluded.



Research in tertiary hospitals in the UK, where a good deal of hospital-based assault research has been conducted, has led to an agreed core violence data set. This initiative has no parallel in Australia. It comprises six basic questions about the location of the violence, weapon used, numbers of assailants, repeat episodes of violence and whether the incident was reported to police.

Following the core data set for the UK, information was recorded on the date and time of ED presentation, mode of transport to emergency, gender and age and normal area of residence, location and environment of assault, alcohol involvement, number of and relationship to assailants, weapon used, police awareness, and whether the patient was admitted to hospital or discharged. Data was also collected on whether the patient had previous ED presentations for alcohol intoxication or assault within the current volume of notes, and if the patient was aggressive to staff.

Injuries were classified according to a modified injury severity score (Table 2.1) adapted for this study due to its simplicity and potential use for compiling data retrospectively. It was adjusted to allow separate categories for 'no injuries requiring treatment' (0) and 'life threatening injuries' (VI). Included in the life-threatening category were stab wounds to the thorax/abdomen requiring surgery and intracranial haemorrhage. Patient death was included in this category.

Case notes were searched for a record of alcohol use, including notes of any volunteered history of alcohol consumption, smell of alcohol on the patient, behaviour suggesting intoxication, or positive blood alcohol levels in blood assay or breath tests.

If multiple weapons were used in an assault, the weapon considered to have the greatest potential for causing injury was recorded, in the order knife/gun > glass/bottle > blunt object > body part.

Police awareness was recorded if case notes stated that police had attended the scene or ED, or if the patient had made a police report.

## Data analysis

A patient's injuries were defined as 'severe' if there was at least one fracture involved. Injuries that were 'not severe' did not involve a fracture but had contusions treated or no injury recorded as treated.

Those with 'severe' injuries were compared, in uni-variate analyses, with those with injuries that were 'not severe'. They were also compared with other variables drawn from patient records using odds ratios (OR) with 95 percent confidence intervals (95%CI). Multi-variate analyses were conducted to examine any effects on these associations of the main confounding variables. To determine these variables, each was added into the regression equation in turn and the impact on the odds ratios assessed. Twenty sets of notes were randomly selected with data for these records collected by researchers working independently. The author examined the researchers' independent assessments of injury severity using the kappa ( $\kappa$ ) statistic. All data were analysed using Stata version 9 (College Station, Texas).

## Ethics approval

Cairns and Hinterland Human Rights Ethics Committee approved this retrospective study, as part of the author's larger investigation into ED data collection on assault.

## Results

### Summary of patient characteristics

A total of 666 injury presentations were initially identified as possibly assault-related. On review of case notes, 118 patients were excluded because they were less than 18 years old at the time of assault, injuries were not caused by assault, or involved sexual assault. Of the remaining 548 charts reviewed, it was possible to assess injury severity in 507. These included 362 (71%) males and 145 (29%) females (Table 2.2). Of these, 297

(59%) were brought to the ED by the Queensland Ambulance Service (QAS) or aero-medical services, 200 (39%) self-presented and 10 (2%) were brought to the ED by the Queensland Police Service (QPS) (data not shown).

Table 2.1 indicates that around half (53%=270/507) of the injuries were minor haematomas or lacerations or no injury was found, with only 10 (4%) of these 270 requiring admission. Around one in five patients (22%=111/507) had suffered at least one fracture (Tables 2.1 and 2.2), that is, their injuries were in the 'severe' category.

Ages of patients ranged from 18 to 84 years. Most of the assaults (58%=294/507) occurred in males and females aged between 18 and 34. Data not shown indicate that most patients (73%=372/507) were Cairns residents and that a further 19 percent (=94/507) lived in other parts of Queensland, with around 6 percent (=29/507) being overseas visitors. Most assaults (75%=339/451) involved a body part (fist, foot, etc), 13 percent (=60/451) involved a blunt object, 7 percent (=30/451) involved glass or a bottle and 5 percent (=22/451) involved a knife or a gun.

**Table 2.1 Injury severity due to assaults in patients presenting to the ED at Cairns Base Hospital from 1 July 2009 to 31 December 2009 (n=507)**

Severity category	Injuries sustained	Number	Percent
0	No injuries found	30	5.9%
I	One haematoma or one laceration	240	47.3%
II	Multiple haematomas or lacerations	126	24.8%
III	One fracture	60	11.8%
IV	One fracture AND haematomas and/or lacerations	30	5.9%
V	More than one fracture	8	1.6%
VI	Life threatening injuries/Death	13	2.6%
Total		507	100%

## Data quality

Complete data, that is, 100 percent of cases, were found in the records only for the variables: date and time of ED arrival, mode of transport to hospital, age and gender of patient, and admission or discharge outcome. The least complete information was about police awareness of the incident (29%, n=146). Information about the location (37%, n=190), environment of assault (52%, n=265) and relationship to assailant (48%, n=243) was available for around half, or fewer, of the cases. Information about alcohol use, however, was found for most cases (73%, n=370).

For the 20 randomly-selected sets of notes assessed, a weighted  $\kappa$  was calculated using weights of 0.75, 0.5 and 0.25 to score the level of agreement where researchers' ratings differed by 1, 2 and 3 categories respectively (injury severity score range = 0 to 4). In all but two cases, these assessments were within one injury category (a weighted level of 87 percent agreement, kappa=0.51, indicating a 'moderate' level of agreement according to defined standards (Altman 1991; Daly & Bourke 2005).

Comparing these authors' assessments for 'severe' and 'not severe' injuries, complete agreement was achieved in 17 of 20 assessments (85%, kappa=0.57, 'moderate' agreement). For date and time of assault, patient aggression, and previous alcohol or assault-related presentations, researchers agreed in 85 percent to 100 percent of their retrospective assessments of patient records.

**Table 2.2** Uni-variate and multi-variate analysis of associations between injury severity due to assaults and predictor variables in patients presenting to the ED at Cairns Base Hospital from 1 July 2009 to 31 December 2009 (n=507)

Characteristic	Group	Injury severity		Crude			Adjusted		
		Not severe	Severe	OR	95%CI	P	OR	95%CI	P
ED arrival time	From 5 am to 9 pm	189	67	1.0			1.0		
	After 9 pm up to 5 am	207	44	0.6	0.4–0.9	0.019	0.5	0.1–2.2	0.353
Was alcohol involved n=370	No	36	8	1.0			1.0		
	Yes	255	71	1.3	0.6–2.8	0.585	1.1	0.1–12.5	0.911
Outcome n=507	Discharged/not wait	381	101	1.0			1.0		
	Admitted	15	10	2.5	1.1–5.8	0.029	0.3	0.0–8.2	0.460
Gender n=507	Female	128	17	1.0			1.0		
	Male	268	94	2.6	1.5–4.6	0.001	0.9	0.2–4.9	0.889
Age n=507	18–24	114	35	1.0			1.0		
Age_2grp=0.6(0.4–0.9, P=0.012)	25–34	104	41	1.3	0.8–2.2	0.349	38.1	2.6–556.7	0.008
	35–44	95	18	0.6	0.3–1.2	0.133	1.7	0.2–13.4	0.632
	>44	83	17	0.7	0.4–1.3	0.219	3.5	0.3–37.0	3.5
Previous admission n=505	No	101	30	1.0			1.0		
	Yes	294	80	0.9	0.6–1.5	0.719	10.8	0.4–266.4	0.147
Aggressive during presentation, 505	No	366	101	1.0			1.0		
	Yes	28	10	1.3	0.6–2.8	0.503	2.6	0.4–18.9	0.337
Weapon n=451	Body part	252	87	1.0			1.0		
	Blunt object	51	9	0.5	0.2–1.1	0.079	0.5	0.1–3.5	0.455
	Glass/bottle/knife/gun	49	3	0.2	0.1–0.6	0.004			
Number of assailants n=311	1	218	46	1.0			1.0		
	2 or more	37	10	1.2	0.6–2.8	0.527	0.8	0.0–12.0	0.845
Victim knew assailant n=243	No	70	16	1.0			1.0		0.937
	Yes	133	24	0.8	0.4–1.6	0.505	0.9	0.1–6.1	
Environment where assault occurred n=265	Bar/hotel	51	9	1.0			1.0		
	Other public location	71	17	1.4	0.6–3.3	0.499	1.3	0.1–12.8	0.807
	Private location	88	10	0.6	0.2–1.7	0.371	3.5	0.3–35.2	0.290
	Institution	14	5	2.0	0.6–7.0	0.266			
Location where assault occurred n=190	CBD	39	13	1.0			1.0		
	Suburbs	103	17	0.5	0.2–1.1	0.089	0.7	0.1–5.7	0.744
	Other Cairns	14	4	0.9	0.2–3.1	0.813			

## Severity of injury and its variations over time

Well over half (56%=286/507) of the presentations occurred in the 72 hours between Thursday (6 am) and Sunday (6 am). Presentations peaked during Saturday–Sunday ( $n=115$ ) representing almost one quarter (23%) of presentations during a week (Figure 2.1). Almost half the presentations occurred between 9 pm and 5 am (49%=251/507) with 40 percent (=44/111) of these categorised as ‘severe’ (Figure 2.1).

Figure 2.2 shows the pattern of the occurrence of injuries, including severe injuries, throughout the week as reflected in the 507 presentations for assault. The 27 late night to early-morning hours from just after 9 pm up to 6 am on Thursday night–Friday mornings, Friday night–Saturday mornings and Saturday night–Sunday mornings comprise just 16 percent of the 168 hours in a week. The severe injuries due to assault occurring during these hours total 27 percent (=30/111) of the severe injuries in a week and 33 percent (=167/507) of all injuries in a week due to assault (Figure 2.2).

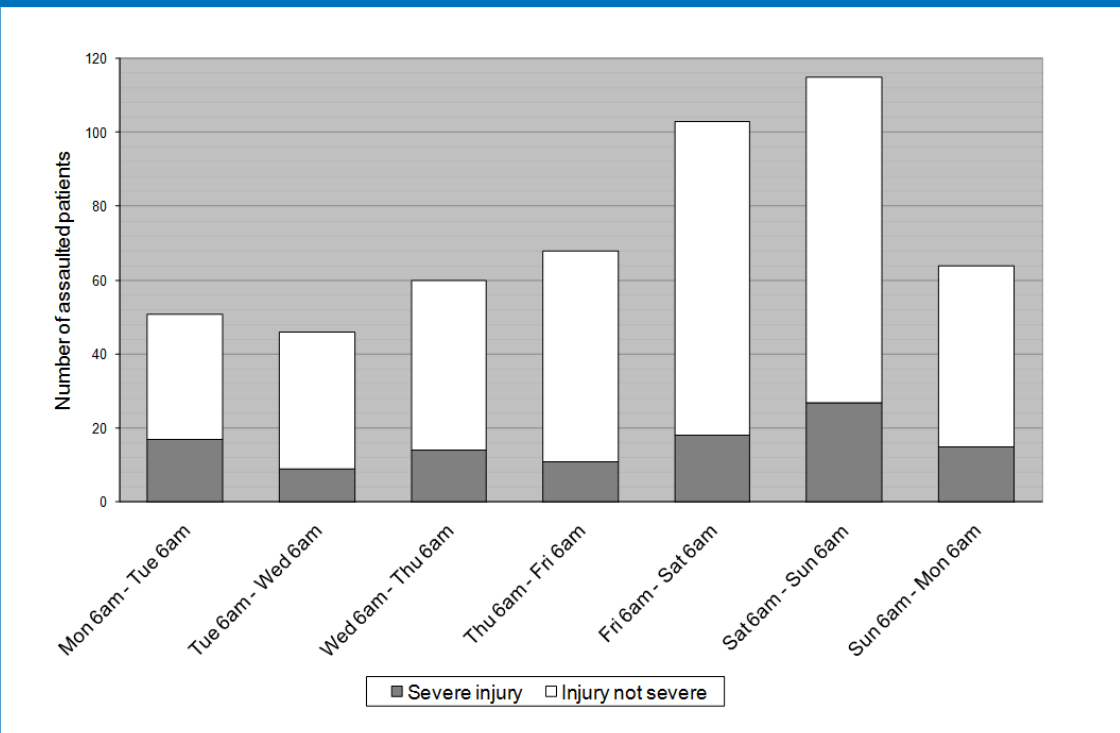
## Outcomes and injury severity

One patient died as a result of their injuries, incurring an injury where alcohol was involved but no weapon used (data not shown). The patient was brought to the ED by ambulance in the early hours of a Sunday morning. Most patients were discharged (94%=475/507), but 5 percent (=25/507) of patients were admitted to hospital, and 1 percent (=7/507) did not wait.

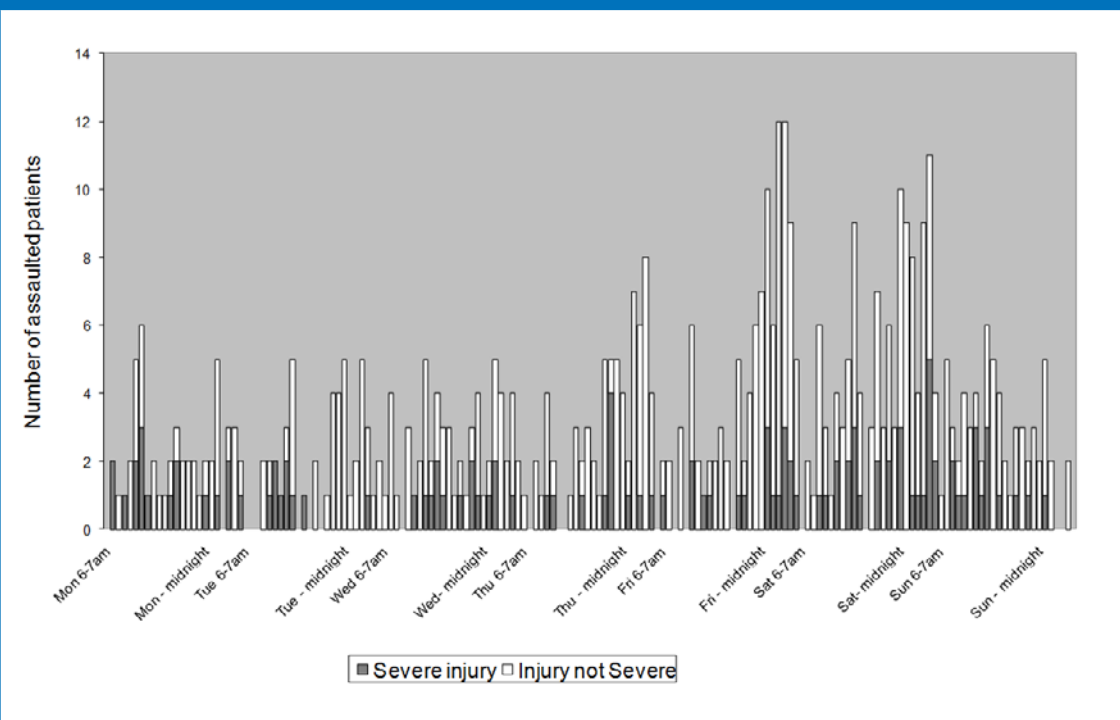
In uni-variate analyses, surprisingly, the more severely injured patients were less likely to present to the ED in the late night to early-morning hours ( $OR=0.6$ ,  $0.4-0.9$ ,  $P=0.019$ ). Interestingly, severe injuries were less likely in patients assaulted with a weapon than in patients assaulted by blows from fists, feet, heads or another body part ( $OR=0.2$ ,  $0.1-0.6$ ,  $P=0.004$ ) (Table 2.2). There were no other associations between injury severity and the core variables measured, except that the more severely injured assault patients were two and a half times more likely than less severely injured patients to be admitted to hospital ( $OR=2.5$ ,  $1.1-5.8$ ,  $P=0.029$ ).

Multi-variate analyses were performed to compare injury severity with time of the presentation to the ED (late night to early-morning or not) as the key predictor variable. In the multi-variate analysis, the estimation sample became much reduced ( $n=57$ ) and the uni-variate associations all tended to disappear except that men aged 25 to 34, compared with men aged 18 to 24, appeared to be considerably more likely to be severely injured ( $OR=38.1$ ,  $2.6-556.7$ ,  $P=0.008$ ). When predictor variables were added to the uni-variate model of injury severity and time of presentation to the ED, the model was very unstable probably due to the high number ( $n=26$ ) of statistically significant associations between the 55 pairs of predictor variables.

**Figure 2.1** Patterns of presentations across days of the week by severity of injury due to assault in patients (n=507) presenting to the ED at Cairns Base Hospital from 1 July 2009 to 31 December 2009



**Figure 2.2** Patterns of presentations across times of the day during a week by severity of injury due to assault in patients (n=507) presenting to the ED at Cairns Base Hospital from 1 July 2009 to 31 December 2009



In a multi-variate model which included age, gender, and weapon involved, severe injuries remained less likely in those who presented in the late night to early-morning hours compared with those who presented earlier in the day (OR=0.5, 0.3–0.9,  $P=0.032$ ). This association, however, was not statistically significant in females (OR=0.9, 0.3–2.8,  $P=0.886$ ) and strengthened slightly when data for males alone were analysed (OR=0.4, 0.2–0.8,  $P=0.008$ ).

## Discussion

A significant proportion of presentations to hospital EDs in Australia are for injuries caused during alcohol-related assaults in inner-city, LNEPs. These increase significantly during weekend peak periods (Poynton et al. 2005). A recent Queensland Parliamentary Inquiry into Alcohol Related Violence (2010) has led to the trial introduction of 'Drink Safe Precincts' in several Queensland cities. The Queensland inquiry, echoing the National Preventive Health Strategy (2009), urges more comprehensive data collection to document numbers and types of incidents, with both initiatives looking to EDs to provide suitable data for evaluation. The data collected supports previous research, finding that most victims of assault are young adults, males more commonly than females (Fothergill & Hashemi 1990; Warburton et al. 2006), assaulted with a body part (Hedeboe et al. 1985; Howe & Crilly 2002) resulting in mostly minor injuries (Hedeboe et al. 1985). These patients most often present late at night or early in the morning, during the weekend (Young 2003; Bellis et al. 2008; Taylor et al. 1997).

In contrast to previous research, over half of all patients knew their attacker (Young 2003). Although current government recommendations are targeting interpersonal assault occurring around CBD entertainment 'hotspots' (Ministerial Council on Drugs Strategy 2006), our data suggests that most assaults in Cairns occur in the suburbs.

Patterns of assault for male and female victims are distinctly different. Men have a clear late night/early morning peak in assault presentations, are more likely to be intoxicated, sustain severe or life threatening injuries and require hospital admission more than women (Hedeboe 1985). Women tend to present evenly throughout the day, with less severe injuries. Assaults on women are also five times more likely to have occurred in private residences, than in licensed premises. Women are more likely to present repeatedly, to be attacked by someone they know, with the patient's partner recorded as the assailant in more than half of female presentations. These differing patterns support the idea of two separate social pathologies being responsible for assaults on males and females, and provided new evidence that domestic violence is a significant issue in Cairns.

Alcohol was involved in the vast majority of assaults, and two thirds of patients had previously presented to the Cairns ED for alcohol intoxication or assault. Men were more likely to be intoxicated than women. The implication that violence mainly affects a small number of repeat victims presents a strong argument for an ED-based intervention for patients presenting as a result of alcohol and/or violence. A study of maxillofacial injuries found that 82.6 percent of patients expressed an interest in learning about or enrolment in stress/violence reduction programs in their responses to health promotion questions (Laski et al. 2004).

More than 90 percent of patients presenting due to assault were seen, treated and discharged directly by the ED, with most presenting out of hours, when staffing is reduced and often less experienced staff are on duty. A significant proportion of assaulted patients were verbally or physically aggressive to staff. Developing interventions to reduce the number of assaults and the corresponding healthcare burden would directly benefit the ED.

According to these records, police were made aware of very few of the assaults occurring in Cairns over this period. Although this may reflect in part the clinical irrelevance of documenting such information in the ED, previous research also found violent crime was largely unreported to police (AIC 2010).

EDs can contribute significantly to reducing violence by collecting relevant and useful assault data, as suggested by the National Alcohol Strategy, and sharing of relevant statistics with police services, government and licensing agencies. Information about patterns of interpersonal assault, their time and location, would allow targeted policing which has already proven to reduce violence in high risk premises (Warburton et al. 2006).

## Limitations

The most significant limitation to this study was the lack of data recorded in case notes. Clinicians' documentation contained ambiguous histories, were illegible or inadequately described the injuries. More serious injuries tended to be documented more extensively, with the most serious assaults being detailed in a comprehensive trauma record. Insignificant injuries that required minimal treatment were associated with rudimentary documentation.

The most comprehensive data collected was for variables that were completed at point of contact with ED, as mandatory fields in EDIS. Queensland Ambulance Service (QAS) documentation was a reliable source of data for locating and describing events, although its records were often missing from the case notes. Many of the variables needed for intervention planning (eg location of assault) are not clinically and were often not documented.

The data collection fields for some records involved each author searching through QAS, nursing and medical records, as well as interpreting vague documentation. This is likely to have resulted in the agreement between researchers on variables other than those with mandatory EDIS fields.

## Conclusion

A distinct difference in the patterns of violence towards males and females is evident. A strong link exists between alcohol and interpersonal violence, which largely affects a small group of repeatedly injured individuals. Current community violence campaigns are targeted at licensed premises within the CBD, where only a small fraction of assaults occur.

ED data is a useful surveillance tool, as it can highlight patterns of violence in the community. Data could be shared with police and community organisations to guide assault reduction interventions, including targeting trouble suburbs, gender specific campaigns, and ED-based interventions.

## Summary

The close relationship developed between the research team and ED staff through the project shows that collaboration with ED personnel is possible for this kind of research. To be viable, minimal resource impost on ED staff is required. The most interesting result for this report was that only 37 percent (190/507) of the case notes inspected by the clinicians contained information about the location of the assault. Where data was available to describe the location, 27 percent (52/190) were recorded as having occurred in the Cairns CBD. Most (74%=374/505) had at least one admission for an assault in the current volume of notes suggesting there were many repeat victims. Also of note was that most (73%) of the presentations were Cairns residents. Information about the involvement of alcohol in the assault was available in 73 percent (370/507) of cases.

What is not fully described in the study is the intensive work that went into retrieving clinic charts over nearly three months. So, despite the researchers' conclusion that using this kind of data is potentially useful as a surveillance tool, its practicality and accuracy are questionable. The data take considerable time to compile and are therefore not accessible for more immediate response and actions by police or community agencies.

The research sought to examine whether surveillance could be improved for the project by attempting to collect data prospectively from patients arriving at the ED waiting room using the resources of the triage counter staff. The results are yet to be published but reflect the difficulties and considerable expense of collecting useful information for monitoring using this approach. The next section describes the results of these efforts. It shows the difficulties encountered and clearly indicates that an approach involving interviews with patients for surveillance data is not appropriate or feasible.

## Study 3

*Challenges for collecting injury surveillance data from patients presenting to the emergency department in a North Queensland city.*

### Introduction

A recent Queensland parliamentary inquiry into alcohol related violence has led to the introduction of 'Drink Safe Precincts' on a trial basis in several Queensland cities. The report of this inquiry echoes the National Preventative Health Strategy in urging more comprehensive data collection (Queensland Legislative Assembly 2010). This would document the number and types of incidents, with both government documents looking to EDs to provide suitable data for evaluation. ED data has long been established as a superior measure of community violence to police data (NPHT 2009; Morgan & McAtamney 2009) and is now considered an important tool for evaluating alcohol-related violence strategies (NPHT 2009).

Injury surveillance systems gather data on the number and characteristics of injuries, identify trends and risk factors, develop injury prevention strategies, and assess their impact (Broderick et al. 2009). Despite validation of electronically captured injury surveillance data over a decade ago (Ministerial Council on Drug Strategy 2006), and most Australian EDs having access to the electronic injury surveillance tool (AIC 2010) many Queensland EDs do not collect this data. Information that is collected is variable in quality and quantity. Currently, assault data collated through the Queensland Injury Surveillance Unit is not consistently fed back to hospitals, local community, police or government groups, with data collected by the trauma registry including only patients severely injured and requiring hospital admission, which makes assessing other injury types difficult.

Resource issues are the largest practical barrier to implementing assault injury surveillance in the ED. Previous studies found that data collected by ED staff led to unacceptable delays at triage (Shepherd et al. 1993). Furthermore, EDs approached to collect data have described the EDIS electronic data collection tool as time consuming and unfriendly to users. Moreover, there is a misperception among ED staff that the data is not acted upon. Until specific resources are allocated for assault surveillance, the data collection tool must be simple and require minimal clinical staff commitment.

To be relevant to policy makers and service providers, data must describe the circumstances of the assault, as well as injuries caused (Broderick et al. 2009). A recent unpublished CBH study found retrospective assault surveillance inadequate to collect data on circumstances of the assault, was time and resource consuming. This supports previous research (e.g. Sutherland et al. 2002). Data collected must be shared with all agencies involved in injury prevention, at regular intervals with minimal time delay (NPHT 2009). Sustainable data collection is crucial for analysis of trends, and assessment of the impact of interventions (Broderick et al. 2009).

In order to address these challenges, the present study collected data prospectively in the ED using patient completed paper questionnaires for a four-month period between March and June 2010. The aim was to test whether a practical, sustainable, valid and relevant data collection method could be developed. If so, it could be used across Australia to help target and assess the effect of violence reduction campaigns.

### Methods

#### Ethics approval

The Cairns and Hinterland Human Rights Ethics Committee approved this study, as part of the author's larger investigation into collecting ED assault data.



## Setting

Cairns is not one of the cities involved in the current trials of 'Drink Safe Precincts'.

## Study population

Data was collected on all adult patients ( $\geq 18$  years) presenting as a result of interpersonal violence. For the purposes of this study, 'assault' was defined as interpersonal physical violence of any kind, and was identified by the triage nurse. Violence including sexual assault, recognised as having a distinct social pathology, was excluded in accordance with the AIC definition of assault.

### *Qualitative data collection and ED staff recruitment to assist with the study*

Prior to the start of data collection researchers held several meetings with ED nursing and medical staff colleagues, outlining the significance and aims of the study.

Posters were placed around the department, informing patients and staff of the project, and incentives offered to members of staff collecting the most patient completed questionnaires each month.

Training sessions were held with triage staff, and the authors of this paper conducted observation sessions within the ED to learn about problems with the data collection tool.

They held formal regular meetings with nursing and medical staff to update them on progress, preliminary results of the study, and to prompt ongoing patient recruitment.

### *Data collection: paper questionnaire*

Research in tertiary hospitals in the UK, where a good deal of hospital-based assault research has been conducted, has led to an agreed core violence data set, an initiative with no parallel in Australia (NPHT 2009; Shepherd et al. 1993). It comprises six basic questions about the location of the violence, weapon used, numbers of assailants, repeat episodes of violence and whether the incident was reported to police.

Researchers developed a brief paper questionnaire to be self-completed by patients, based on the core data set developed in the UK, as well as on consultation with staff. Information was collected on patient demographics, time and date of assault, number of alcoholic drinks consumed, location of last drink, number and relationship to attackers, weapons used and intention to report the incident to the Queensland Police Service.

During the period 1 March-30 June, 2010, questionnaires were made available at triage, and patients identified by the triage nurse were asked to complete a questionnaire and return it to triage. The questionnaire included an option for the patient to refuse to participate in the study, in which case this was noted on the questionnaire and no further questions answered.

## Data collection: Emergency Department Information System

The authors retrospectively matched information on the questionnaire with data routinely recorded in EDIS to provide additional information. Data was collated for matched records for date and time of ED presentation, exact age of patient, mode of transport, area of residency and patient outcome (admission, discharge, death).

If multiple weapons were recorded as being used in an assault, the weapon considered to have the greatest potential for causing injury was recorded, in the order knife/gun > glass/bottle > blunt object > body part.

## Data analysis

Frequency distributions were analysed in spreadsheets.

<b>Table 2.3</b> Assault in 87 patients at Cairns Base Hospital ED 1st March - 30th June 2010		
Characteristic	Value	Number
Age n=87	18–24	27
	25–34	31
	35–44	20
	≥45	9
Sex n=87	Male	61
	Female	26
Residence n=87	Cairns	71
	Queensland	12
	Australia	0
	Overseas	4
Day of ED presentation n=87	Monday	9
	Tuesday	7
	Wednesday	9
	Thursday	16
	Friday	17
	Saturday	21
	Sunday	8
Time of ED presentation n=87	00.00–06.00	43
	06.00–12.00	10
	12.00–18.00	5
	18.00–00.00	29
Location of assault n=84	Residence	32
	Licensed premises	15
	Street	32
	Other	5
Alcohol consumed n=77	Yes	63
	No	14
Relationship to attacker n=78	Known person	44
	Stranger	34
Location of last drink n=49	Residence	22
	Licensed premises	19
	Other	8
Number of attackers n=81	One	52
	More than one	29
Weapon used n=86	Body part	61
	Penetrating object	13
	Blunt object	12
Police report n=78	Yes	36
	No	23
	Plan to	19

## Results

### Data collected from EDIS

Data that could be collated from EDIS records by authors after matching with paper questionnaire responses were 100 percent complete for date and time of ED presentation, age and sex of patient, and area of residence. Data for mode of transport to the ED were 97.7 percent complete, with one record having no information about how the patient arrived at the ED.

### Data collected by paper questionnaire

Data were recorded by patient-completed questionnaires for the date of assault in 95.4 percent (83/87), time of assault in 82.8 percent (72/87), venue where assault occurred in 96.6 percent (84/87), street location of assault in 70.1 percent (61/87). Where violence was stated to have occurred in licensed premises, the premises was named in 66.7 percent (10/15) of cases. Data for alcohol use prior to assault were recorded in 88.5 percent (77/87). Of the cases involving alcohol, the amount of alcohol consumed was recorded in 83.1 percent (59/71), and location of the last drink, in 71.8 percent (51/71). Relationship to attacker data were collected in 88.5 percent (77/87), with number of attackers recorded in 93.1 percent (81/87). Weapon used in the assault was recorded in 98.9 percent (86/87) and patient intentions to make a police report stated in 89.7 percent (78/87).

Overall, data collected from EDIS were 99.7 percent complete, whereas data recorded by paper questionnaire were 85.3 percent complete.

## Discussion

Compared with the data captured for 507 assaulted patients during a six-month retrospective study performed at CBH ED in 2009, data capture for only 87 patients during the four months of prospective surveillance is likely to grossly underestimate the number of assaulted patients presenting to ED during this period (see also Sutherland, 2002). Data collected, however, showed similar patterns as in previous research, with young intoxicated males being assaulted most commonly, late at night without a weapon. Problems encountered in getting a higher response rate involved the large number of nursing staff working at triage and staff turnover, which despite regular education and feedback sessions meant still encountering staff members who were unaware of the project. Despite this method requiring minimal staff time commitment at triage, an increasingly overburdened triage during a busy period was likely to overlook giving out questionnaires, due to time constraints, or simply forgetting. Although many ED staff were enthusiastic about the project, some were unable to see past the short-term increase in workload to the long-term potential benefit to ED, and were reluctant to get involved if data collection was not mandatory. With 7 percent of patients refusing to complete questionnaires, and a further 16 percent initially consenting, but not returning questionnaires to triage, a significant proportion of patients were unwilling or unable to complete the questionnaires. It is possible patients refusing questionnaires are a different group from those consenting, for example patients presenting as a result of domestic violence.

Feedback from staff quoted intoxication with alcohol being a major obstacle to patients completing questionnaires. Although the vast majority of assaulted patients who present for medical care do so to an ED (NPHT 2009), ED attendance after assault will vary in different areas, as well as over time, and is affected by the department's accessibility and other available health services. Patients not presenting for medical treatment, presenting elsewhere, or pronounced dead at the scene will not be captured by ED data collection. This is a limitation common to all data collection tools based in the ED, leading to recommendations for data to be combined with data from several sources (Legislative Assembly of Qld 2010).

A significant downward trend in the number of questionnaires completed as the project progressed indicates a lack of sustainability for this method, despite efforts to provide regular feedback to staff, and incentives for

asking patients to complete questionnaires. Major department renovations included relocation of the triage during the study, resulting in chaos and confusion, combined with high staff turnover. Patient-completed questionnaires still require a dedicated staff member to input and de-identify data before distributing to relevant agencies. Co-ordination of the use of data by these agencies is a separate issue.

Complete data were gathered for simple demographic information collected by mandatory data entry fields on EDIS. Almost complete data (more than 90%) was collected for mode of transport to ED, date of assault, venue type where assault took place, number of attackers and weapon(s) used. All data in this category except mode of transport to ED were collected by questionnaire. The least completed information field ( $\leq 80\%$ ) included the actual street location, or name of licensed premises where an assault occurred and the location of the last drink, possibly because the patient could not remember these details. ED injury surveillance is notoriously difficult with even high quality injury surveillance systems collecting incomplete data. Surprisingly, potentially sensitive information, including the relationship with attacker, and alcohol consumption, was completed in more than 80 percent of questionnaires, although no attempt was made to verify the patient's estimation of alcohol consumption with blood or breath alcohol levels. The patient response rate was similar in and out of hours, suggesting the questionnaire was a reasonable length for patients willing to complete it, and that data capture is attainable even out of hours, when most assaulted patients present.

The patient-completed questionnaire collected relevant and useful data concerning the circumstances of assault. Although requiring minimal additional time for triage, this data collection method was unsuccessful in collecting valid data in a sustainable way. This was due largely to inadequate numbers of assaulted patients being offered the questionnaire. For data collection to be more complete and sustainable, a simple, user friendly, and mandatory EDIS-based questionnaire is needed which is part of the triage nurses' core responsibilities (Broderick et al. 2009). Although the length of the patient-completed questionnaire appeared acceptable to patients, staff feedback suggested that this would be too lengthy to incorporate into an EDIS questionnaire. An EDIS data collection tool could, however, incorporate demographic data already routinely collected, with data found by this project to be collectable from most patients. This would limit the additional time required for data collection. Completion by nursing staff would minimise the impact of patient intoxication on data collection, and would require minimal staff training for EDIS users. This method would require ongoing staff consultation and feedback in order to maintain the best possible quality data collection. The EDIS questionnaire's already de-identified data could be automatically distributed each week to give continuous, up-to-date surveillance data. With most assaulted patients being repeat presenters due to alcohol or assault, Drug and Alcohol Brief Intervention Teams (DABIT) currently being piloted in Queensland EDs could use this data to identify intervention opportunities, and assess their impact. The information would be useful to local community groups, police, council and liquor licensing committees to help identify trends and risk factors, develop injury prevention strategies, and assess their impact.

## Limitations

This project coincided with major ED renovations, including relocating triage and large nursing staff turnover. This limited the ability to collect data well. These problems are likely to occur at times in any ED so if trend analysis is to be meaningful, data collection needs to be robust enough to continue through difficult periods.

## Conclusions and recommendations

Patient-completed questionnaires collated useful and relevant assault surveillance information, but were severely limited by poor uptake. A short, simple, mandatory and user-friendly EDIS questionnaire needs to be developed in order to collect valid and sustainable data from all EDs across Australia. As well as regular and timely sharing of de-identified data with local and national agencies involved in injury prevention, the data could be immediately available to DABITs.

## Summary

As our new colleagues in the ED were leading this research, we were negotiating the local development and trial of a simple, compulsory computer-based surveillance tool. The ED data manager, the ED Director, the Nurse Unit Manager and ED staff specialists supported the development of this tool. The study beyond this point would not have been feasible without the contribution of the ED data manager and her intimate familiarity of the software, and the endorsement and support of the Nurse Unit Manager and the Director of the ED. All of this effort made a significant in-kind contribution to the project.

## 3. Methodology

### Introduction

The preceding research demonstrates the need for and the challenges of compiling information about the location of an assault that is precise enough to be linked with a particular licensed premises or even a street in the LNEP. With this in mind, along with the question of feasibility for collaboration and information sharing, we conducted a survey among key stakeholders in Cairns to investigate the nature and extent of the city's LNEP. Using semi-structured interviews we also asked key stakeholders about their views on collaborating to share information, and for further targeted interventions in Cairns. The following two studies summarise the results of these investigations. It reveals a high degree of consensus about the Cairns LNEP and strong willingness to share information and to improve collaboration across agencies to better target intervention strategies. We have also conducted follow-up interviews, not included in the following analysis, to examine the stability of these views.

### Study 4

***Defining the LNEP and possible strategies for reducing alcohol-related assault: an example using a community-based methodology in Cairns, North Queensland (Australia).***

#### Introduction

Most policy responses by Australian governments to reduce the incidence of alcohol-related assaults have been focused primarily on environments in and around licensed premises (Loxley et al. 2005). Measuring the rate and severity of assaults occurring in these LNEPs has been a research and policy challenge across jurisdictions for a number of decades (Loxley et al. 2005; Shepherd et al. 1990; Graham & Homel 2008; Law Justice and Safety Committee 2010), partly due to difficulties in obtaining location data for incidents occurring within LNEPs precise enough for reliable monitoring (LJSC 2011; Shepherd & Sivarajasingam 2005; SA Police 2009; NSW Government 2009).

The Queensland Government recently legislated for a trial of 'Drink Safe Precincts' incorporating areas in the vicinity of licensed premises in three major cities (Queensland Government 2010). The three precincts in the trial are very small sectors in each city, all <1km<sup>2</sup> in area, but these types of precincts, commonly known as the 'night time economy' (NTE), are highly problematic in terms of social policies and programs for addressing alcohol-related violence occurring there (Shepherd & Sivarajasingam 2005). The 'Drink Safe Precincts' trial uses tighter regulation specific to the LNEP as the basis for intervention, with funding to support local committees of liquor licensees and venue owners, police, ambulance officers, transport providers, local government and community stakeholders. These committees have the task of preparing 'precinct management plans' which identify priority measures in the precinct, and producing local transport and infrastructure solutions (Queensland Government 2010). Courts have the power to ban individuals from a 'Drink Safe Precinct' (Bligh & Lawlor 2010). Precinct boundaries are defined by legislation, as required for environmental and situational interventions such as precinct management plans and the banning of individuals.

Cairns, in Far North Queensland is not included in the 'Drink Safe Precincts' trial, but is the subject of these parallel studies. Similar to the three trial precincts, the boundaries of the Cairns CBD have been defined by regulation partly as a result of stakeholder forums. This paper documents the processes used to refine stakeholder definition of the Cairns LNEP and to identify interventions to reduce alcohol related assaults within

the precinct. This paper also shows the use of a community-action research methodology to assess the scope and feasibility of a collaborative community-wide intervention for Cairns.

Substantial evidence suggests that coordinated, collaborative community-wide interventions are the most effective in reducing assaults in and around precincts with a high density of licensed premises (Brennan et al. 2011; McIlwain & Homel 2009; Jones et al. 2011), and have previously been effective in Cairns (Hauritz et al. 1998). The processes of establishing the necessary commitment for collaborative initiatives across potential stakeholder groups in these precincts, however, appear to be seldom studied. It is challenging to sustain collaborative community-wide interventions (Fawcett et al. 2010) and reductions in assaults in LNEPs (Brennan et al. 2011; Queensland Government 2010; Jones et al. 2011). These challenges have been specifically documented in the Cairns precinct (Hauritz et al. 1998). This paper highlights how this definition stage of the research overcame some difficulties in sustaining collaborative community-wide interventions to reduce alcohol related assaults. This study discusses the implications for developing and sustaining reliable monitoring of violent incidents in the entertainment areas and collaborative strategies targeting these incidents.

## Method

### Setting

Cairns is an accredited International Safe Community (WHO Collaborating Centre on Community Safety Promotion 2011). Its LNEP has 26 venues licensed to serve alcohol after midnight on weekends (Pointing et al. 2011). Tourism is a major economic contributor to the city, with more than 550,000 visitor nights annually, including a significant backpacker market (Tropical Tourism North Queensland 2010). Well-established inter-sectoral forums address community safety issues in the city.

### Participants

Twelve stakeholder organisations were identified from community registers as having key organisational responsibilities in preventing or responding to alcohol-related assault in the Cairns LNEP. These agencies are: regulatory and enforcement agencies, licensed venue associations, primary and allied health services, legal representatives, and the local government. For maximum saturation, each interview participant was asked to refer researchers to other key persons who they believed had similar roles, were similarly knowledgeable and experienced, and who could comment on the issues.

### Interview questions

Twenty-nine semi-structured interviews were conducted. Participants were asked to consider 'person to person physical contact with violence' linked to licensed premises, excluding sexual assault (due to its different social pathology). A base map of Cairns city was provided and participants were asked to draw the boundaries of the area they believed to be of greatest concern in relation to alcohol-related violence. They were also asked to identify and mark particular localities of concern within these boundaries, and to explain their reasons. Participants were then invited to comment on:

- the main alcohol-related assault issues concerning their agency;
- their knowledge of existing interventions to address the issue;
- their routine data collection procedures and the potential for sharing this data;
- potential for collaborative interventions with other agencies;
- the level and outcomes of existing inter-agency communication around the issue;
- their views on the feasibility of targeted collaborative interventions, and
- any opportunities and barriers to developing and implementing collaborative interventions.

## Focus groups

Twelve stakeholder focus groups were also conducted between January and December 2010 in a participatory research approach to provide feedback and confirmation of study results. These focus groups comprised interview respondents and other individuals from the agencies.

## Data analysis

Using a modified cognitive mapping approach recently applied in assessing health risks linked with alcohol outlets in urban environments, the hand-drawn maps from each participant were traced to image files. Initial comparisons were made by overlaying the image boundaries drawn around each participant's defined area of concern (Basta et al. 2010). The commonality of boundaries was identified by consensus among the authors and depicted in Figure 3.1. The particular places of concern within the areas hand-drawn by participants were examined by tallying the frequency with which they were mentioned and depicted in Figure 3.3. Other key emergent themes in the mapping were assessed (see Figure 3.2)

Using a standard thematic data analysis approach, the interview data were transcribed and analysed by searching for key themes (Braun & Clarke 2006). These key themes were coded for feedback to stakeholders in focus groups. They were in clusters summarised as 'Current practices or intervention strategies recognised' and 'Intervention strategies recommended'. These initial interpretations were provided to focus groups of key stakeholders for confirmation and feedback.

## Ethics approval

The Queensland Health Cairns and Hinterland District, the James Cook University Human Research Ethics Committee, and the Queensland Police Service Research Committee (Ethical Standards Command) provided ethics approvals.

## Results

### Participants

A total of 29 interviews were conducted. The agencies and positions within them are listed in Box 3.1. Seven respondents were drawn from the ED (four nurses, two doctors and the data manager), six respondents from the Queensland Police Service, three from the Cairns Regional Council, two from the liquor regulatory office, and one respondent was nominated by the licensed venue industry association to represent venues. The local 24-hour medical clinic, and other venue security providers were approached, but declined to be involved in the study.

A further 18 venue owners and managers regularly attended the licensees focus group through the Cairns City Licensees Safety Association (CCLSA). They were given the opportunity to comment or provide feedback on methodology and results either in that forum or in private.

The length of time each interview respondent had been in Cairns varied between six months and 17 years. Focus group respondents stated that continuous feedback of results had been used to support funding applications and the tasking of operational resources and was viewed as an important step toward sustainability.

### Identification of LNEP

There was much agreement regarding the boundary of the LNEP and 'hotspots' (see Figures 3.1 and 3.3). The emphasis on pedestrian egress pathways from the LNEP (Figure 3.2) was an unexpected finding arising spontaneously from participants who had been asked to define the precinct boundary.



## Coordinated data collection and intervention approaches

All respondents agreed that coordinated data collection was desirable as long as it placed no additional stress on current resources, and if identified agency-specific confidentiality requirements could be negotiated. All respondents reported coordinated intervention approaches were feasible and desirable, provided no additional stress was placed on current resources.

## Interventions already in place

Participants' understandings of current intervention strategies are listed in the left two columns of Box 3.1. Liquor enforcement operations are prominent in participants' minds. Situational interventions comprise 13 of the 24 existing interventions mentioned by respondents. Comparatively few participants mentioned the broader social marketing and education programs. An educational project targeted at senior school children was mentioned, a local initiative of the Cairns City Licensees Safety Association, the Youth Substance Misuse Service and the Cairns Regional Council. Apart from the DABIT initiative, which was recognised as an important intervention by those aware of it, no respondent identified individually-focused psychological or counselling interventions. The inter-agency forums in Cairns each serve a different stakeholder mix, but overlap significantly. All four existing inter-agency forums are focused on the Cairns CBD. Of other existing interventions identified, six of seven regulatory and enforcement interventions are specifically situational and the seventh, 'evaluation of location and patterns of violence', requires precise location data. Six situational and transport initiatives were specifically identified.

Five of the seven identified educational interventions were broad population level strategies. Media reports have geographical implications (news stories relating to violence in the LNEP only relate to violence in the precinct). The 'Think the Drink' program focuses on harm minimisation education among year 12 students towards end-of-school celebration. The program's harm minimisation educational sessions clearly have situational/environmental implications in the sort of behavioural message delivered.

## Recommended further interventions

The two right-hand columns in Box 3.2 indicate further recommended interventions.

Five of the seven suggested regulatory and enforcement interventions are specific to venue and precinct environment. Of the two that are not, one involves joint training initiatives, which would be focused on the operational processes within the LNEP, and could be classified as enhanced communication processes. One calls for more severe sentences. Five out of seven suggested educational/awareness themed interventions and recommended enhancing existing programs. The two new interventions, community education on the role and scope of CCTV, and naming and shaming people presented to the ED, both have clear locational implications. Two media strategies were suggested. Seven additional specific environmental/situational interventions were also put forward, as well as a recommendation to remove patrons quickly from the precinct at the end of their night. No concrete suggestions on how to do this emerged from the interviews, but there was consistent recognition the marshalled taxi rank in the centre of the precinct has previously contributed to enhanced precinct safety. The individual level brief intervention work of the DABIT was recognised, and could focus on enhanced referral to agencies providing personal safety strategies or other counselling to prevent repeat victimisation.

Box 3.3 indicates a high degree of agreement supporting enhanced collaboration around data collection and sharing. This was seen as desirable provided no stress was placed on current resources. All interviewees also recognised that police statistics did not accurately reflect the rate of assault within the entertainment precinct.

## Discussion

### Statement of principal findings

The process used to define and test the boundaries of the LNEP helped to understand the context in which alcohol related assaults and related injuries occur in the Cairns precinct. It also provided stakeholders with information to better understand and target interventions within the precinct. It highlighted unexpected findings related to where the incidents occurred and interventions to help patrons exit the precinct.

Most interventions identified or suggested through interviews were situational/environmental. All existing and suggested interventions are focused on the defined precinct with the exception of one individual-level intervention, one sample population-level educational campaign, and enhancements of inter-agency links. Every person interviewed highlighted generational and attitudinal issues as a necessary point of intervention and recognised the importance of continued broad population level strategies.

Most stakeholders also recommended enhanced inter-agency communication processes. All participants identified defining and testing the precinct, and qualitative analysis of the location of assault incidents as significant steps in embedding sustainable interventions. Respondents reported that ethics approval and written agreements with licensees were important factors in establishing trust in the independent role of researchers. Good relationships were built on transparent, regular information sharing. This allowed specific contextual complexities to be overcome early in the project. Lasting change in reducing alcohol-related harms is most likely when those who are affected are part of the change process and any community action must take account of the complexity of the system in which the intervention takes place (Poynton et al. 2005). The role of researchers as technical advisers to stakeholders has been recognised as an important step in evaluating the effectiveness of community action projects to reduce alcohol related assaults (Holmila et al. 2008).

The boundary of the Cairns precinct identified through government forums (and regulated through legislation) was strongly confirmed through this study. This is not surprising as there was a high degree of correlation among interview participants, some of whom contributed to the forums. The research methodology, however, refined the area of concern to describe four hotspots of violence, and unexpectedly revealed the importance of pedestrian egress routes. These two findings are considerable indicators of the significance of the methodology to enhance intelligence-led policing. All interviewees recognised that police statistics did not accurately reflect the rate of assault within the precinct. This supports previous research that suggests this sort of assault is under-reported in Australia (Graham & Homel 2008). This qualitative research process was an integral step in establishing a combined quantitative data collection framework.

### Strengths and weaknesses of the study

This research analyses the views of the key service delivery agencies in Cairns and not the victims of violence or the consumers of leisure activities in the LNEP. Such research needs to be conducted. In addition there was no analysis of the police or ED trajectories of injury, victimisation or offending of individuals repeatedly involved in assault incidents in the precinct. Such research may uncover more interventions, based on individual level interventions. These would still, however, require locational information to identify the incident as occurring within the precinct.

### Meaning of the study: possible mechanisms and implications for clinicians or policymakers

Problems with sustaining community-wide interventions are well documented in both injury epidemiology and criminological methodologies (Poynton et al. 2005; Shepherd & Sivarajasingam 2005; SA Police 2009) and lack of shared responsibilities and common goals are significant among these (Shepherd & Sivarajasingam 2005). The method described in this paper shows that operationalising a research process has overcome many of these issues. This supports previous research into community crime prevention frameworks to reduce

ARA (Holmila 2008; Graham & Homel, 2008). Identifying the boundaries of the precinct and its hotspots, and testing these with stakeholders was important in:

- assessing perceptions of the level and severity of alcohol-related violence within that precinct;
- measuring awareness of existing situational interventions within this precinct;
- gaining agreement for coordinating data collection, and
- assessing the feasibility of inter-agency collaboration.

Refining the precinct definition establishes the foundation of a scientifically defensible research design to evaluate the effectiveness of interventions to reduce alcohol related assaults and related injuries in the entertainment precinct. This evidence is required to embed interventions. Methodological designs enhanced by the definitional process include Realist Evaluation (Pawson & Tilley 1997), and variations of experimental design and ecological epidemiology.

All stakeholders saw the implications of focusing situational crime reduction and harm minimisation interventions. It has policy implications for economic modelling relating to cost effectiveness and cost-benefit analysis. It also refines the estimates of lost productivity and other intangible costs to the community and the burden on ED resources (through source location for presentations to EDs). When combined with previous studies of the links between violence, injury and licensed venue density and alcohol availability, the most effective option appears to be focusing resources on situational and environmental interventions.

The last two decades of research have delivered some promising approaches to reducing injuries resulting from violence in LNEPs and licensed environments. Little scientifically reliable evidence, however, is as yet available to guide policy. Neither is evidence of sustainable reductions, nor methodologies to operationalise measurement of these interventions (Chikritzhs et al. 2007; Stockwell & Chikritzhs 2009; NDLERF 2008; Doherty & Roche 2003; Shepherd 2001; Stevenson & McClure 2005). Interventions to reduce alcohol-related assaults in the night-time economy have been broadly categorised as educational and situational (Morgan & McAtamney 2009). A current policy question in Australia is whether universal or targeted strategies are most efficient and cost effective in reducing alcohol related assaults. Two recent systematic reviews of effective interventions to reduce harm in and around licensed premises highlight the importance of defining the geographical scale of intervention, and the variability in methodological rigour studying the effectiveness of these interventions (Brennan et al. 2011; Jones et al. 2011). As the Queensland Government has recently defined LNEPs in every major city, the importance of the egress routes appears to have significant operational and policy implications. The emphasis on pedestrian pathways to exit the precinct formalises another point of situational/environmental and educational interventions to reduce injuries in these areas. This, and public awareness campaigns regarding the scope and effectiveness of CCTV operations, are the only new intervention points identified by respondents.

The effectiveness of educational campaigns in reducing harmful levels of drinking in these precincts and other harmful mechanisms suggest situational interventions have the most cost effective impact (Morgan & McAtamney 2009). Mixed evidence exists regarding the effectiveness of non-situational interventions to reduce alcohol related assaults in the precincts in both the public health (Poynton 2005; Queensland Law & Justice Safety Committee 2010) and criminological literature (Graham & Homel 2008). This suggests that interventions focused on the environmental factors in the precincts may be the most cost effective.

A recent report found that more than 60 percent of Australians aged from 18 to 29 drink to get drunk (Alcohol Education & Rehabilitation Foundation 2011). This culture of determined drunkenness, combined with the reason these precincts exist, suggest it may be aetiologically meaningful to view every assault occurring in an LNEP as alcohol related (Graham & Homel 2008).

## Unanswered questions and future research

Research is needed into the patrons of the precincts. Testing whether patrons also view situational interventions as more important in harm reduction will assist in designing and testing interventions. Additionally testing the motivational drivers as to why they are there may provide valuable insights into methodologies and intervention design.

Quantifying this geographical area into a definable LNEP, and the use of the same location by daytime users may provide different dimensions of information. It may have implications for business decisions discussed between local councils and chambers of commerce.

A specific area of research in Queensland is studying the dissemination of information relating to Drink Safe Precincts and civil banning orders, and evaluating the process and effectiveness of implementing the civil banning orders.

Whether research into alcohol-related assaults in LNEPs is conducted through a scientifically defensible criminological model, or a public health framework for collaborative action, the first step is analysing information about the problem/goals and establishing monitoring systems. This paper documents a process that was indispensable to establishing a coordinated data collection and sharing framework. Research replicating the process in legislated 'Drink Safe Precincts' is recommended.

**Box 3.1 Agencies with key responsibility for preventing and/or responding to alcohol-related assaults in the Cairns LNEP and interviews conducted**

Agencies with key responsibility for preventing and/or responding to alcohol-related assaults in the Cairns LNEP	Positions within agencies identified with key responsibility for interview
<b>Regulatory and Enforcement Agencies</b>	
Queensland Police Service	District Inspector, Officer-in-Charge of the Cairns City Police Beat station and officers from the liquor enforcement, intelligence, tactical and first response sections
Queensland Office of Liquor and Gaming regulation (responsible for licensing and monitoring of venues)	District manager and one field officer
<b>Venues</b>	
Owners, management and security providers	One venue owner (President of Cairns City Licensees Safety Association), Operations manager of security providers to most venues
<b>Health</b>	
Queensland Ambulance Service	District Operations Manager of the Queensland Ambulance Service
Cairns Base Hospital Emergency Department	Emergency Department four nurses, two doctors, and the data manager
Drug and Alcohol Brief Intervention Team	Three staff from the Drug and Alcohol Brief Intervention Team (DABIT)
<b>Non-government service delivery organisations</b>	
Victims of Crime Support Service	Manager
Youth Substance Misuse Service	Manager
Transport and other business	
Public transport bus service	Manager
Sole Taxi Company	Operations manager
Solicitor	One solicitor (Chair of the CBD Safety Summit)
Media	The crime reporter and chief-of-staff from the sole local newspaper
Cairns Regional Council	Two community safety positions Inner-city facilities manager

**Box 3.2** Twenty-nine participants were asked about existing practices or intervention strategies to reduce alcohol-related violence in the Cairns LNEP

Strategy type	Proportion (%) of 29 participants aware of this type of current strategy	Strategy type	Proportion (%) of 29 participants recommending implementing this type of strategy or enhancing existing strategy
<b>Enforcement</b>		<b>Enforcement</b>	
Responsible Service of Alcohol regulations	45%	Restrict availability and enforce responsible service of alcohol	59%
Liquor Enforcement and Proactive Policing officers	34%	Combined operations eg 'Amazon'	34%
Joint Operations and targeted police rostering	34%	Expand use of ID scanners in clubs	31%
Council street-based security guards	14%	Target repeat offenders and ban from premises	24%
Last drinks venue recorded in assaults reported to police	10%	Higher police visibility	24%
Police evaluation of patterns and locations of incidents	7%	Joint training initiatives (venue and street-based security, police)	17%
Police Infringement Notice system available	3%	More severe sentences for offenders	7%
<b>Education and community awareness-raising programs</b>		<b>Education and awareness-raising</b>	
Responsible drinking generally encouraged	34%	Change attitudes to responsible drinking at population level	66%
'Think the Drink' program	24%	Enhance youth-focused interventions, eg 'Think the Drink' program	41%
Drug and Alcohol Brief Intervention Team (DABIT)	24%	Enhance brief interventions, eg role of DABIT	22%
'One Punch Can Kill' program—Queensland Police	10%	More community education on role and scope of CCTV	17%
Local newspaper	7%	Naming and shaming people presenting at emergency department	7%
'Don't turn a night out into a nightmare' national program	3%	Victim/offender narratives in the media	3%
'Leggy not legless' national program	3%	Local newspaper initiated campaign (including narratives)	3%
<b>Inter-agency communication processes in place</b>		<b>Communication and information sharing</b>	
Between individual agencies	41%	Refine liquor accord to enforce more closely	52%
Cairns 'CBD Safety Summit' forum	38%	Enhance inter-agency coordination, communication, sharing information	34%

**Box 3.2 (continued)**

Strategy type	Proportion (%) of 29 participants aware of this type of current strategy	Strategy type	Proportion (%) of 29 participants recommending implementing this type of strategy or enhancing existing strategy
Liquor Accord and Cairns City Licensee Safety Association	34%	Continue JCU Research Project	17%
Cairns Regional Council Community Safety Committee	17%		
<b>Environment/situational</b>		<b>Environment/situational</b>	
Cairns Regional Council Closed Circuit TV surveillance	31%	Reduce venue density	24%
3 am 'lockout' for premises trading until 5 am	21%	Education and/or visible enforcement at late night food vendors	17%
ID scanners for entry to licensed venues	17%	Breathalysers for self-testing—condition of entry to venues at 3 am	14%
Additional lighting (& other CPTED principles)	3%	Enhanced use of CCTV	10%
		Crime prevention through environmental design to remove 'hotspots'	10%
		In-venue educational resources	7%
		Provide snacks in venues	7%
<b>Transport initiatives</b>		<b>Transport</b>	
Secure taxi rank during peak times (one security guard and a marshal)	21%	Getting people out of town quickly and safely: pedestrians, taxis, buses	38%
Late night bus (since discontinued)	7%		

### Box 3.3 Key themes from interview data

#### Information about the issue

- Recognition that licensees have worked to enhance patron safety
- No one agency sees all the assaults—incomplete picture
- Friday and Saturday nights (rolling over into early morning) are main source of incidents
- Mixed awareness of partnered projects to address issue
- Mixed level of internal initiatives to address issue
- Low marketing of internal projects to potential partners (with exceptions)
- High level of willingness to collaborate around both coordinated interventions and data sharing
- Regulatory and police visibility important, but not the only thing

#### Rate and level of violence

- Cairns CBD relatively safe (depending on where the participant had worked)
- Operation Amazon and successors have made a positive impact
- CCTV, security guards and radio network have made a positive impact
- Rate and level of crime dropping from 10 years ago
- The research project has valuable 'honest information broker' role

#### Themes around precursors to incidents

- Alcohol availability—shortened trading hours required
- Polydrug use a problem
- People 'liquoring up' before coming into town
- Quick exit from CBD is important
- Enforcement of responsible service of alcohol
- Responsible drinking
- Attitudinal—less respect for others and for authority than in the past
- People drink to get drunk—Australian culture
- Under-age drinking an increasing issue
- 'Tide is turning' in regulation and government
- Education at a young age is a key ('Thinking Drinking' initiative valued)
- More violence occurs between women now than in the past

Figure 3.1 Border of CBC defined by 29 participants



Examples of four maps with the different areas depicted. Ten respondents, including five of the seven ED staff, and taxi management, identified the central area as one single 'hotspot'. Ten respondents identified hotspots within the LNEP, but no boundary. The unbroken line was identified as the boundary by venue owner and security provider, and the police officers with specific responsibility for liquor enforcement. The respondents who identified the boundaries depicted through the circle and the dashed line were mixed. Eight respondents also noted that events outside the precinct had an impact on the number of assaults within the area.

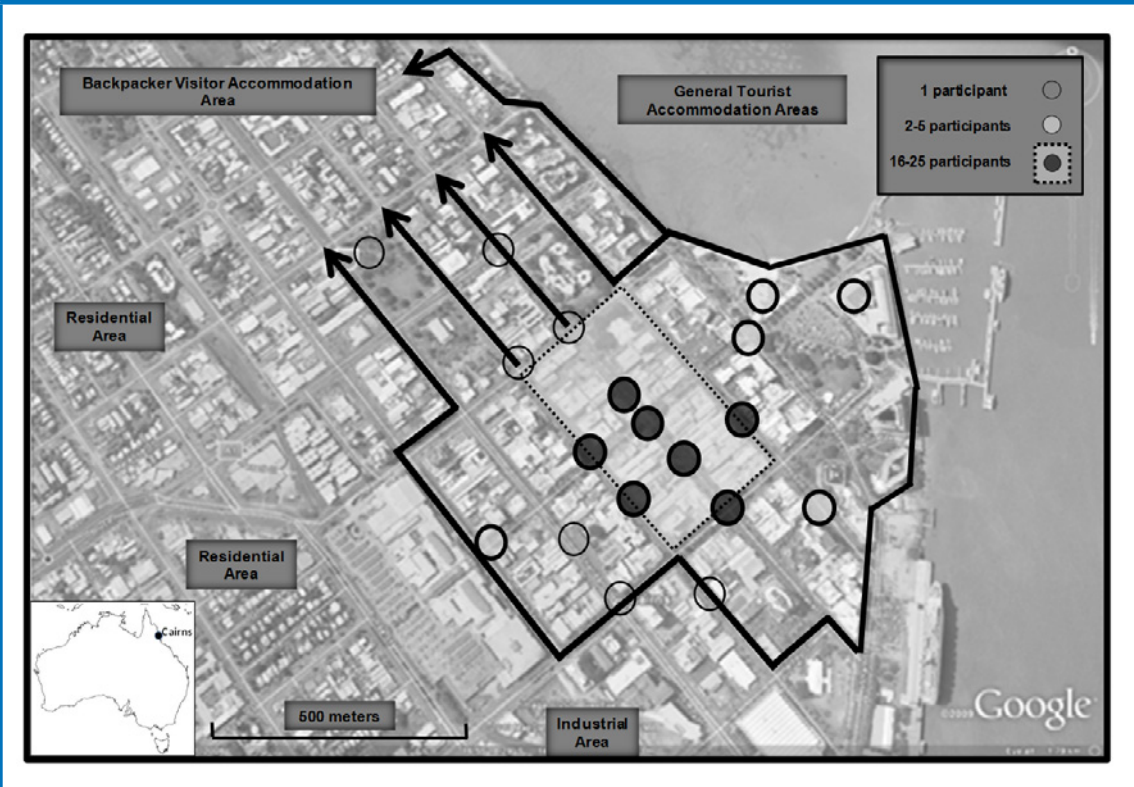


**Figure 3.2** Egress routes



The commonly-reported pedestrian egress routes from the LNEP.

**Figure 3.3** Cairns—LNEP



This combines the delineated zones, the pedestrian egress routes from the precinct and the identified hotspots. Twenty-one respondents regarded the central zone of the town as the main area of concern. This zone includes two venues, the taxi rank and late night food establishments. Most identified 'hotspots' are at intersections. A number of respondents identified spots where the clientele from different styles of venues mixed as pedestrians, and which were regular locations for violence.

## Summary

The preceding study established a consensus for delineating the nature and extent of the LNEP in Cairns as understood by the leading stakeholders who manage the consequences of violence in the city as part of their core business. Over several years a clear capacity has developed in the city to address issues of alcohol-related violence in the inner area. It is important for this paper to show the historical context of perceptions of alcohol-related violence in Cairns. A perception exists that although violence in this precinct appears to have declined, its nature seems to have changed in the last two decades. Alcohol-related violence has become less predictable and has more harmful consequences. Goodwill exists in the city, however, to improve ways of addressing the issue.

An expected result was the general agreement about the core locality within the precinct where alcohol-related violence was a concern, namely the small area where some of the late-trading nightclubs are located. A novel result was the apparent prominence in the minds of stakeholders that the violence 'hotspots' are located at points in the city where peoples' paths cross, at street intersections or crossings in particular. Also novel is the understanding that egress routes to the north-west of the city centre are trouble spots. This was reinforced after the study was conducted, by a serious attack on a lone female nightclub patron walking back to her accommodation. The data tend to suggest that, although there are licensed premises which are known focal points for alcohol-related violence, it is elements of the precinct's environment that are pinpointed as dangerous localities.

With a reasonably clear consensus on the boundaries of the LNEP demonstrated through this component of the research, it was now possible to try to collect surveillance data pertaining directly to the area. The aim now was to count and describe the incidents of person-to-person violence occurring in this defined zone.

A workshop was first conducted with all stakeholders to share the results of research conducted to date and to seek agreement to proceed to collect information. The following study details how this was done and the subsequent results.

## Study 5

***The 'Cairns model': compiling information prospectively about violent incidents and the role of alcohol in the LNEP in a regional centre in Far North Queensland.***

### Introduction

Information from multiple sources is required for effective and comprehensive violence surveillance in a community (Howe & Crilly 2002a, 200b; Jernigan et al. 1989). EDs in hospitals are principal sources of this information (Borges et al. 2006; Charalambous 2002; Cherpitel 2010, 2007). The use of ED data is an important measure of community violence (Borges et al. 2006; Cherpitel 2010, 2006) with a potentially significant part to play in a public health approach to injury prevention (Shepherd 2007, 2001, 2000). Evidence suggests that the combined use of police and ED data (Shepherd 2001; Howe & Crilly 2002a, 2002b; Sutherland et al. 2002; Warburton & Shepherd 2006) together with data from closed circuit television (CCTV) systems may increase the detection of violence and reduce injuries and injury severity in assault-related ED attendances (Sivarajasingam et al. 2003). This paper reports the results of an exploratory study into the utility of data collected from the ED, police and a CCTV system together with data compiled from other community agencies in a regional city in North Queensland.

With respect to licensed premises in inner-city areas in Australia, much of the available research investigating possible strategies to reduce alcohol-related violence has focused on the effects of trading hours, (Stockwell & Chikritzhs 2009, 2002) and closing times (Freeman et al. 2008; Palk et al. 2010), liquor licence density (Chikritzhs et al. 2007; Livingston et al. 2007) and interventions in the server setting (Graham et al. 2005; Graham & Homel 2008; Homel et al. 2004; McIlwain & Homel 2009). Community-level intervention strategies have been tried in the past (Homel et al. 1997; Jones 2011), but have been difficult to sustain (Hauritz et al. 1998; McIlwain & Homel 2009).

This exploratory study is part of a developing community action intervention to reduce the occurrence and impacts of alcohol-related violence in LNEPs in an Australian jurisdiction. It is in the inner city that alcohol-fuelled violence is currently attracting considerable public attention. The main aim of the study is to demonstrate the feasibility and utility of collecting information about alcohol-related assault in a LNEP prospectively, at low cost and in an efficient and sustained manner, and examining what the information tells us.

## Methods

### Setting

The city is serviced by Cairns Base Hospital, located about 1.5 km from the CBD. It has the sole ED serving the city and the Cairns hinterland region. Other key agencies providing services relevant to this study include: Queensland Police Service (QPS), Cairns Regional Council 'CitySafe' program with its CCTV, inner-city surveillance system supported by security personnel on the streets, private security providing security services inside licensed venues, Queensland Ambulance Service and private inner-city medical clinics.

The Cairns LNEP or 'CBD' has been defined and described using qualitative methods in a study yet to be published. Its area of approximately 0.6km<sup>2</sup> contains 26 venues licensed to sell liquor after midnight with eight of these licensed to trade beyond a 'lockout' point at 3 am, closing at 5 am. 'Lockout' means that patrons who leave these particular premises after 3 am cannot re-enter (Freeman et al. 2008; Palk et al. 2010).

### Data collection

#### *Information about person-to-person violence (assault)*

For the purposes of this feasibility study, 'assault' was defined as intentional interpersonal physical violence of any kind. Sexual assault was not included because it is recognised in the literature as having a social pathology distinct from the kind of violence often seen in the inner-city, LNEP.

Collaboration with the ED at Cairns Base Hospital made data collection on injury-related presentations possible for April, May and June (2010). Information about incidents of intentional interpersonal violence occurring during this period was obtained in the following way.

- In the ED, following discussions and planning with the ED Director and Nurse Unit Manager, a software project was negotiated, designed locally and linked to the EDIS. This software project used two markers.
- Triage nurses were asked to type 'CBD' in the presenting problems screen for patients (aged ≥16 years) if they had reason to believe that the incident occurred in the area defined on the map provided of the Cairns CBD.
- At diagnosis, the ICD10 injury codes and some alcohol problem codes triggered a compulsory question for the diagnosing clinician: 'Do you have any reason to believe that this presentation was the result of an alcohol-related assault in the CBD?' Available answers were: 'yes', 'no', and 'unsure'.
- For the cases flagged by 'CBD' and the 'yes' and 'unsure' categories, data were provided describing the date and time of presentation to the ED, age and gender of the person presenting and the rich text notes from the presenting problems screen at Triage. This data was provided by monthly email in an Excel® spreadsheet to the researchers.

- The Cairns Regional Council CitySafe function has more than 80 cameras conducting around-the-clock surveillance in the area defined as the CBD. Camera room observers record the details of any incidents relevant to the safety of persons and security of property in the CBD with the support of information from security personnel patrolling the city streets. A descriptor code of 'alcohol-related assault' is available for camera room observers to describe an incident. Data were provided for inspection including all incidents recorded during April, May and June (2010) ensuring that all noted incidents relevant to this study were included. Information about each incident included: the date and time of the incident, the category of incident allocated by the camera room operator, and the rich text notes made by the operator. Rich text notes generally included information describing the approximate age and gender of those involved in the incident. Camera room operators often recorded comments and observations about perceived levels of intoxication and other contextual information in these notes. This data was provided by monthly email in an Excel® spreadsheet to the researchers.
- Queensland Police Service provided information about all charges laid for alcohol-related assault for incidents occurring in the defined CBD area. This was done with the approval of the Queensland Police Service Ethical Standards Command and with written support from the district's commanding officer. This information included date and time of the incident, age and gender of those charged, and the charges laid. This data was provided by monthly email in an Excel® spreadsheet to the researchers.
- Queensland legislation requires venue security to keep incident registers. A memorandum of understanding between the researchers and licensed venue owners in the defined CBD was requested by the venue owners to provide them with commercial-in-confidence assurances that the researchers would not disclose information about licensed premises as a group or individually. With this agreement in place, the venue owners' contracted security guards were permitted to provide information about any incident of person-to-person violence occurring on the licensed premises during April, May and June. The information obtained for this study was based on the information in the mandated registers. Persons involved in these registered incidents are usually ejected from the licensed premises with the date and time of the incident, gender, approximate age and a description of the incident recorded. Researchers visited the private security providers in person, collected hard copy reports and manually entered the information into an Excel® spreadsheet.

### *Describing the severity of the incidents*

The study sought to focus on the more serious incidents observed in the LNEP, that is, those that may have more severe clinical consequences for an injured person and social consequences for the Cairns community. Recording an incident that causes a more serious injury is less likely to be affected by extraneous factors (Henley & Harrison 2009) and with considerably more attention and care paid to the description of such incidents in clinical settings (Shepherd & Irish 1989). Recognising this, incidents were described in the ED data as 'serious' if the information contained any evidence of an injury involving at least one fracture, or a blow to the back of the head and neck or if a weapon was used, that is the injury was inflicted other than with a fist or other body part. Incidents categorised as 'not serious' generally included those where victims suffered injuries with contusions, abrasions and lacerations and superficial face and head injuries or pain in parts of the injured person's body other than the head and neck or where no injury was apparent.

'Serious' incidents in the police data, for the purposes of analysis, were recorded if QPS laid a charge of 'serious assault' or 'assault occasioning bodily harm'. If QPS laid a 'common assault' charge or took a lesser action then the incident was categorised as 'not serious'. It was not possible in the time available for the study to negotiate permissions to obtain system data from the Queensland Ambulance Service or from the local 24-hour medical service. However, the related incident was categorised as 'serious' if an ambulance attended the victim(s) of any violence reported through other information sources in the CBD, or if a patient presenting to the ED had been referred by the 24-hour medical centre.

## Data analysis

Each de-identified record was examined separately by the researchers. Data were entered into a spreadsheet and a probabilistic linkage approach used to identify incidents recorded by more than one of the sources of information. Data were tabulated and arranged for graphic representation using Microsoft Excel®.

## Approvals

The Cairns and Hinterland and the James Cook University Human Research Ethics Committees provided ethics approvals for the study. This was supported by a Queensland Health Site Specific Agreement to do the work at the Cairns Base Hospital, by permission from the QPS Ethical Standards Command and by a Memorandum of Understanding with the Cairns Liquor Accord (CCLSA).

## Results

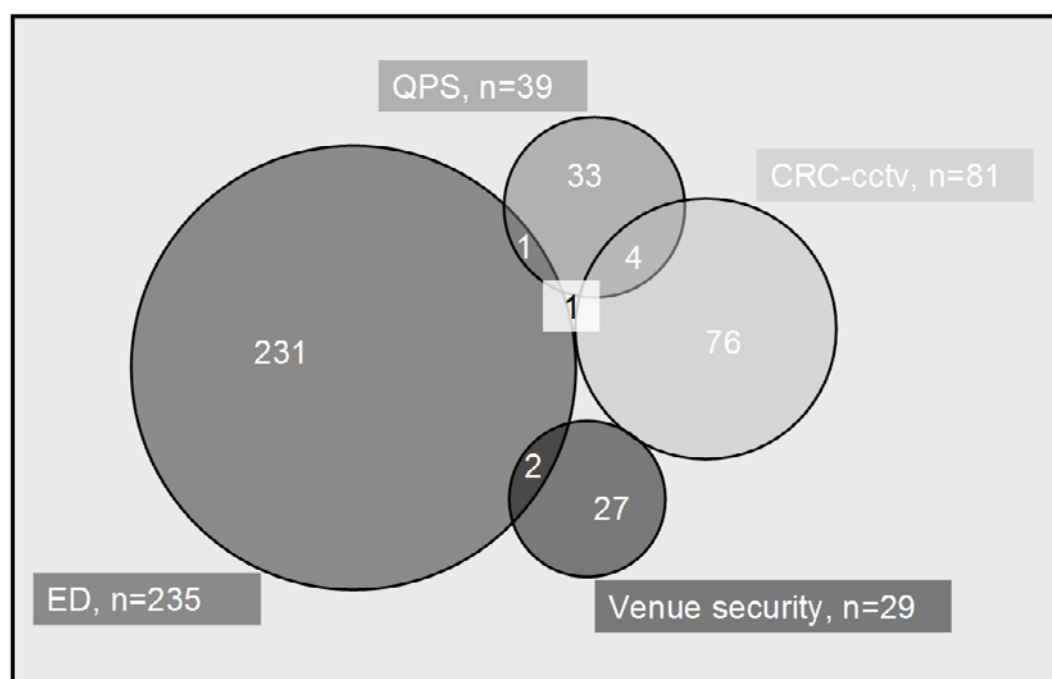
Figure 3.4 summarises the information provided about incidents of person-to-person violence recorded in the Cairns CBD from the various data sources. During April, May and June 2010, the QPS provided information about 39 charges of assault laid in connection with incidents of person-to-person violence occurring in the CBD. Venue security on licensed premises provided information about 29 incidents of person-to-person violence occurring on licensed premises in the area. The Cairns Regional Council provided information for 1,536 incidents of concern for camera operators, recorded during these three months. Upon examining the descriptions of each of these incidents, 81 were found to be incidents of person-to-person violence that occurred in the CBD for inclusion in this study.

Data from the ED, for presentations flagged with 'CBD' in the triage text and with 'yes' and 'unsure' in the diagnosis, initially included 570 incidents. Of these, 335 were excluded because there was no information to confirm the assessment of an assault, the involvement of alcohol or that it happened in the CBD, and some individuals reported on were less than aged <16 years old. Remaining were 235 incidents recorded by the ED.

For the 90 days for which data were recorded during April, May and June 2010, a total of 384 incidents were recorded, an average of 4.3 a day (SD=2.7, range 1 to 11). No days were free of incidents during this period. Two-thirds (68.5%=263/384) of all incidents involved males only, and around one quarter (24.2%=93/384) involved females only, while 7 percent (=28/384) involved both. For the 92 'serious' incidents recorded the respective proportions were similar: males 68.5 percent (=63/92), females 31.5 percent (=29/92) and both 1.1 percent (=1/92).



**Figure 3.4** Recorded incidents of person-to-person violence (n=384 incidents) occurring in the LNEP (CBD) during the months of April, May and June (2010) in Cairns, Far North Queensland, Australia.



ED: Emergency Department, Cairns Base Hospital

QPS: Queensland Police Service

CRC-CCTV: Cairns Regional Council, CitySafe closed circuit TV security system

Venue security: Security providers operating on licensed venues

When incidents were examined and their characteristics compared, eight were thought to be records of observations of the same incident recorded by two or more agencies (Figure 3.4). It was determined that these incidents, occurring at a similar date and time and involving similar people with similar outcomes were probably the same incident (Figure 3.4). It was not possible to precisely determine how many recorded incidents may have been part of a series of incidents observed by multiple agencies with the same main group of people or individuals involved. For example, a fight may have started in licensed premises, continued into the street and finished, with individuals following through with more fighting later.

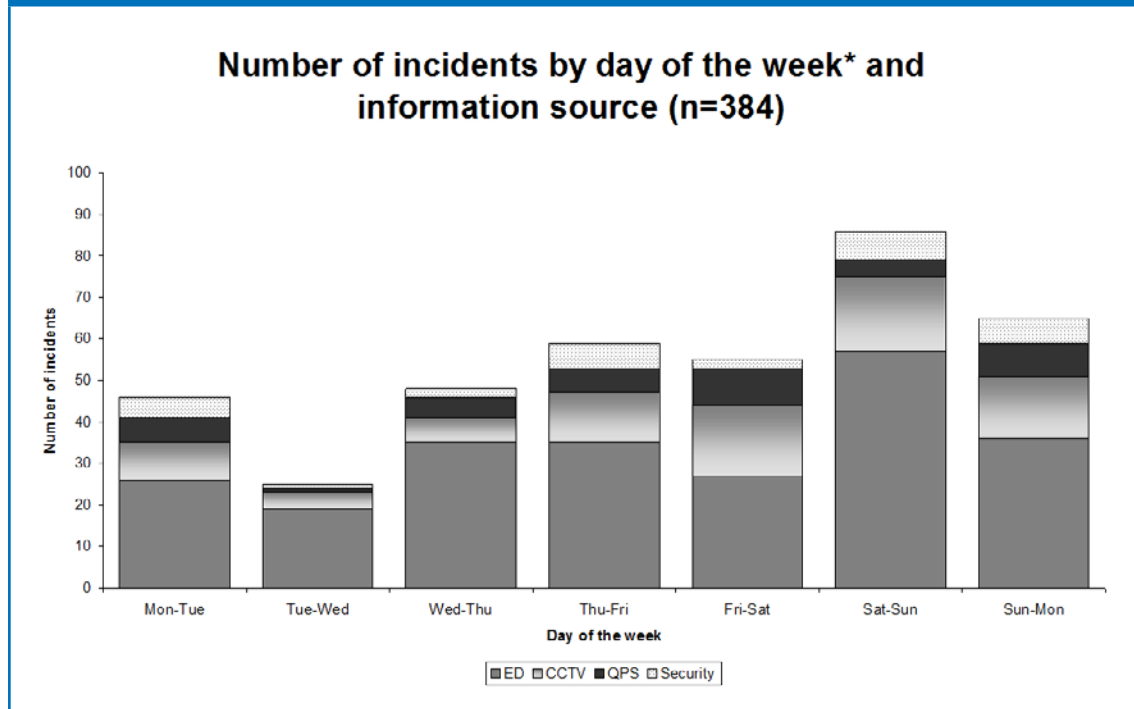
Figure 3.5 depicts the day of the week the incident occurred. The distribution of the occurrence of incidents during the week was bi-modal with, as would be expected, the highest number occurring on Saturday–Sunday with similarly high numbers on Sunday–Monday and with a subsidiary peak on Thursday–Friday. The most concentrated load in the ED was represented in the data for the Saturday–Sunday period during which 24-hour period around one quarter (24%=57/235) of all relevant presentations to the ED were seen. The number of incidents recorded by the CCTV observers and by the licensed venue security officers was more uniform throughout the week but generally greatest from Thursday–Friday to Sunday–Monday whereas the QPS dealt with similar numbers of incidents throughout the week except for the Tuesday–Wednesday period.

Figure 3.6 also suggests a bimodal distribution for the occurrence of incidents at different times during a day totalled across an average week during the period. For the ED, during April, May and June, there was an early peak during the day evident from around 9 am up to 1 pm. This reflects the tendency for some injured patients to seek treatment at the ED several hours after sustaining an injury, often the morning after the night of the injury. Presentations to the ED tended to climb steadily from around 7 pm to a first peak in the two

hours before midnight. This was matched by a similar rise in the number of incidents seen by all agencies. This was followed by another peak for all incidents recorded in the hour before 3 am and in the hour after 3 am. For the Saturday–Sunday period, Figure 3.7 indicates the concentration of incidents observed during the evening and late night hours. It highlights the significant number of presentations to the ED during the early part of the day, many of which incidents were related to violence occurring the previous night.

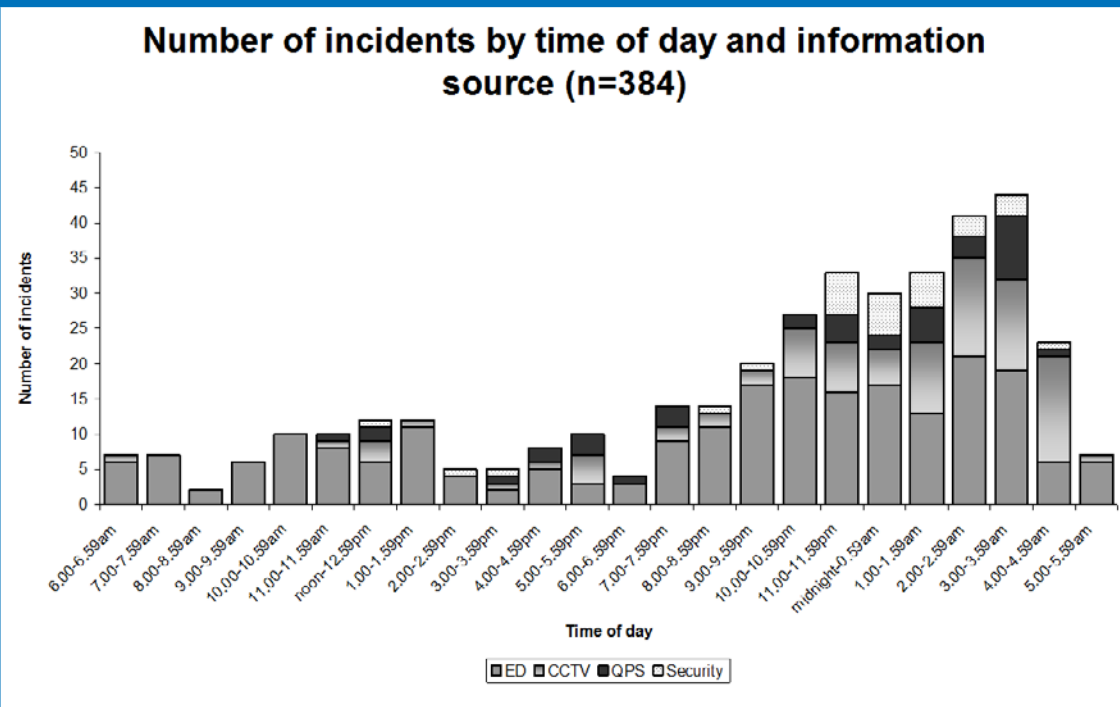
Of the total of 384 incidents recorded, 92 (24%) were categorised as ‘serious’ according to the criteria set out in the methods section. No fatalities resulted from these incidents. On average, 1.6 ‘serious’ incidents occurred each day (SD=1.0, range=1 to 5). The weekly average for the 12 full weeks from 1 April to 23 June was 7.2 ‘serious’ incidents per week (SD=2.8, range=3 to 12). Figure 3.8 indicates that, although incidents of person-to-person violence, including ‘serious’ incidents, were consistently recorded throughout the week in the Cairns CBD, the number of ‘serious’ incidents recorded was highest on Thursday–Friday and Saturday–Sunday. Figure 3.9 indicates that, although, ‘serious’ incidents were recorded throughout the day, a concentration occurred in the hours from 9 pm to 4 am the next morning with the largest number occurring from 3 am up to 4 am. Figure 3.10 indicates that this overall pattern is also reflected in the pattern for the Saturday–Sunday period.

**Figure 3.5** Recorded incidents of person-to-person violence (n=384 incidents) occurring in the LNEP during the months of April, May and June (2010) in Cairns, Far North Queensland, Australia.

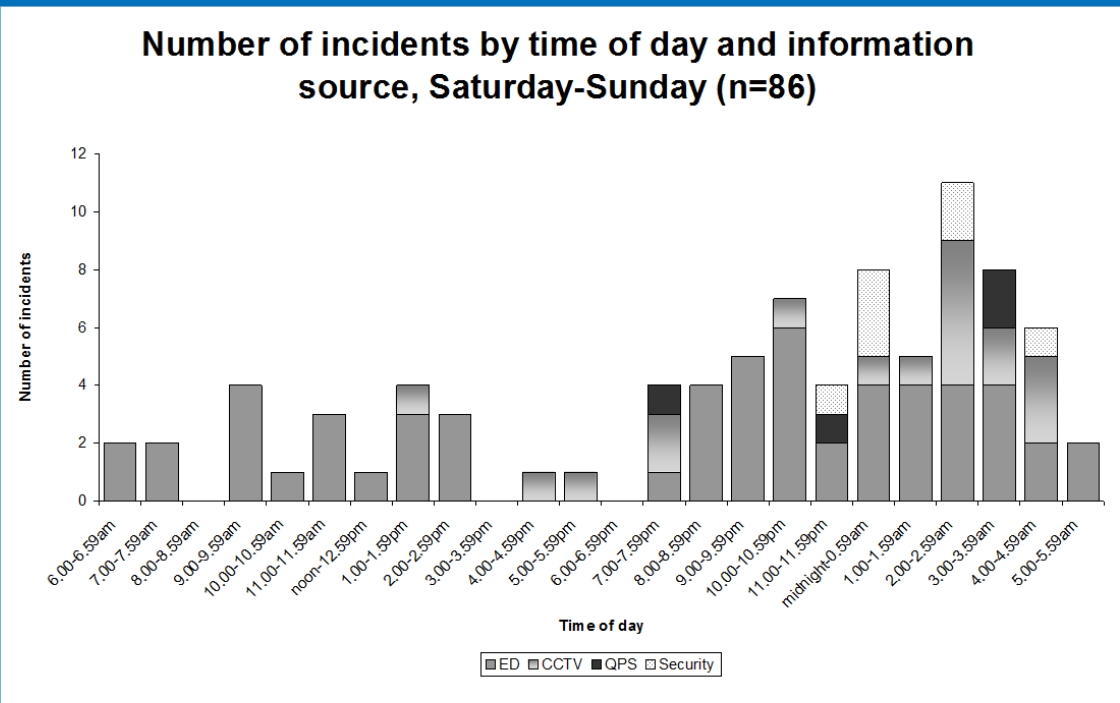


\* Day of the week defined as from 6 am on one day up to 6 am on the following day to reflect the concentration of the occurrence of incidents around midnight.

**Figure 3.6** Recorded incidents of person-to-person violence (n=384 incidents) occurring in the LNEP (CBD) during April, May and June (2010) in Cairns, Far North Queensland, Australia.

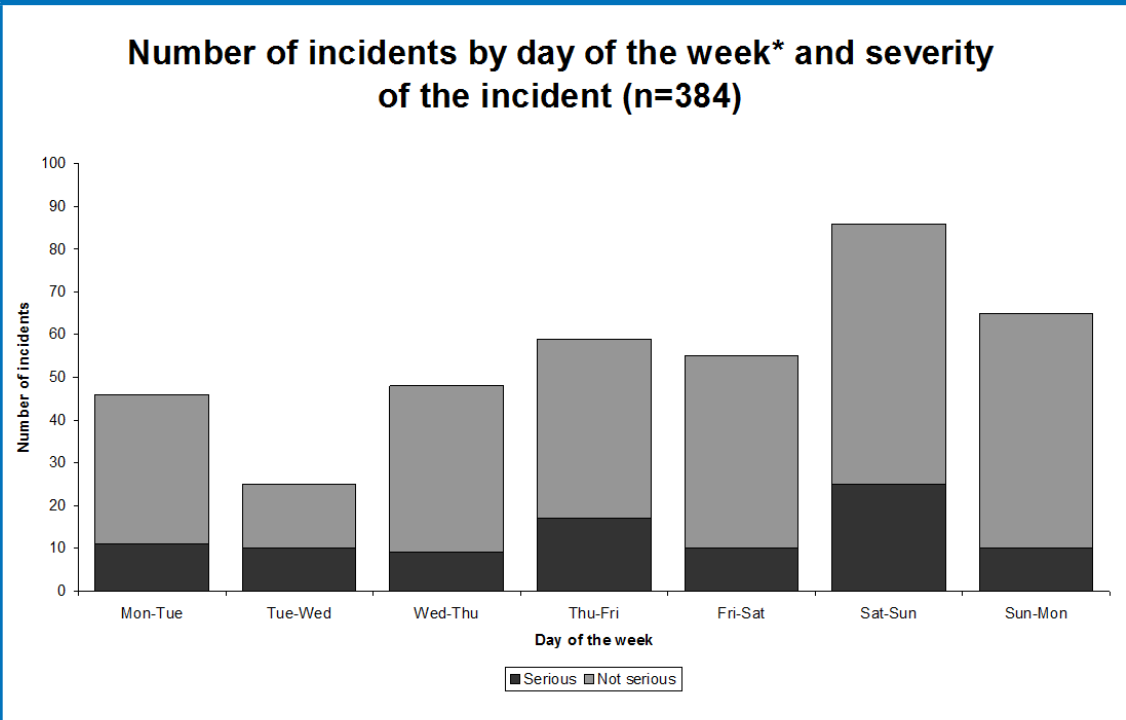


**Figure 3.7** Recorded incidents of person-to-person violence (n=86 incidents) occurring Saturday–Sunday in the LNEP (CBD) during the months of April, May and June (2010) in Cairns, Far North Queensland.



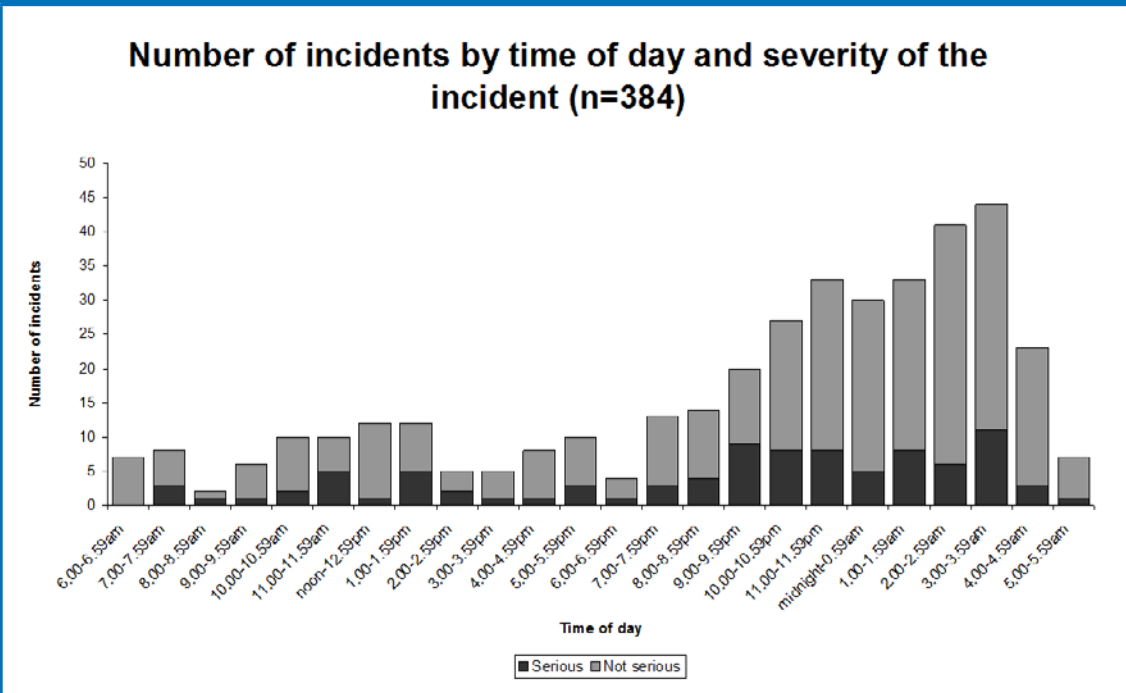


**Figure 3.8** Recorded incidents of person-to-person violence (n=384 incidents) occurring by day of the week and severity in the LNEP (CBD) during April, May and June (2010) in Cairns, Far North Queensland.

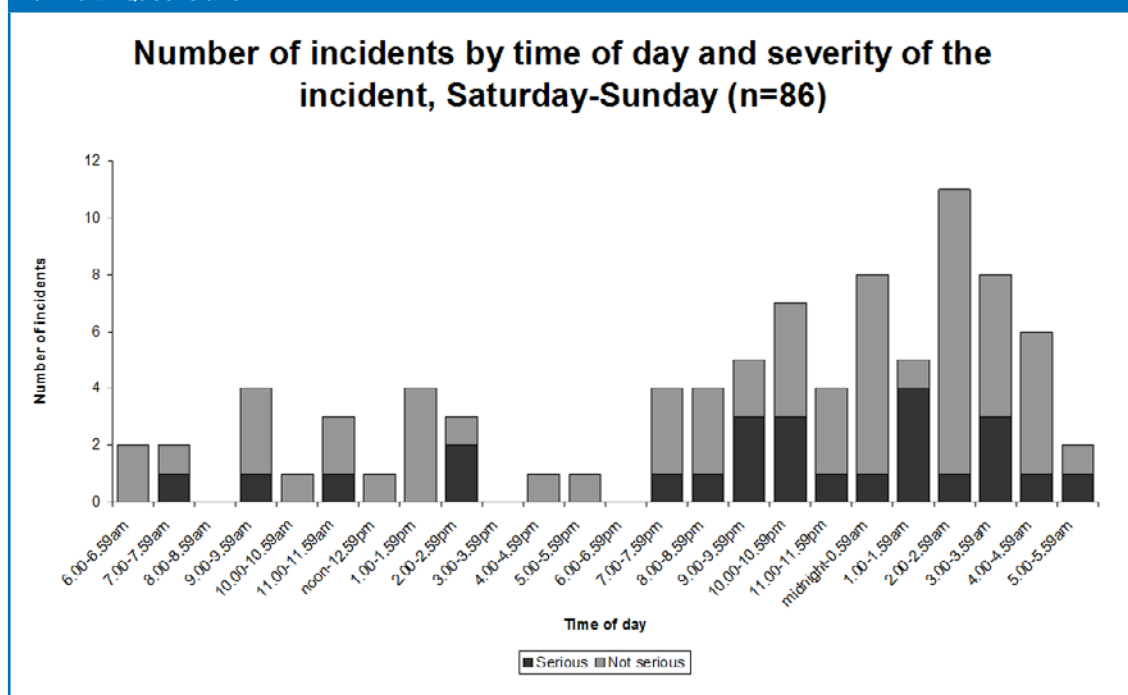


\* Day of the week is defined as from 6 am on one day up to 6 am on the following day to reflect the concentration of the occurrence of incidents around midnight.

**Figure 3.9** Recorded incidents of person-to-person violence (n=384 incidents) occurring in the LNEP (CBD) during the months of April, May and June (2010) in Cairns, Far North Queensland, Australia.



**Figure 3.10** Recorded incidents of person-to-person violence (n=86 incidents) by time of day and severity, occurring Saturday–Sunday in the LNEP (CBD) during the months of April, May and June (2010) in Cairns, Far North Queensland.



## Conclusions

Although this is the first time such data have been compiled and reported for a LNEP, the patterns of incident occurrence are generally consistent with what is broadly known in the literature and what is understood anecdotally. An unexpected result was that the highest number of incidents overall, as well as serious incidents, was recorded around midnight closing times but even more pronounced around the 3 am 'lockout', contrary to the results of previous evaluations (Altman 1991; Daly & Bourke 2005). This reflects anecdotal reports from key stakeholders and our own observations that the peak times and localities within the LNEP for violent incidents are when patrons are walking around on the street and crossing paths. Comparatively little violence was recorded inside licensed venues, although the recording of such violence was in the hands of venue security, parties potentially conflicted by virtue of the commercial interests of the owners.

Combining the data collection mechanisms potentially provides a pragmatic tool for measuring and monitoring alcohol-related violence in small LNEPs like that in Cairns. Before this kind of data can be relied upon for evaluating the impacts of targeted strategies, however, several methodological and practical considerations need addressing. The major ones are discussed below.

The data reported here do not include information from all available sources, with specific exclusions being the QAS, the 24 hour medical centre and medical general practitioners. It is unrealistic to think that all incidents can be observed and recorded exhaustively using this technique. What is more, there are few accessible ways to estimate the number of incidents that may be missed. Many incidents of person-to-person violence, perhaps even serious incidents, may happen in the LNEP with the protagonists simply leaving unobserved and never being detected. In addition, information was not available in this study from all the potential information sources in Cairns. It is likely that many patients of the ambulance service and the 24-hour medical centre who had more serious injuries would have been taken by ambulance to the ED, or referred to the department by the medical centre, and may have ultimately been included in our counts.

An obvious difficulty for evaluation and monitoring research using this data collection technique is that collecting data depends upon applying criteria defining the incidents to be counted. This may be applied differently across various agencies in the community and applied in different ways by different individuals in those agencies. These difficulties would be beyond the grasp of most researchers to control without comprehensive engagement and education of key people responsible for collecting the information. Engaging key people for this study was crucial for consistently collecting data and for progressively improving its reliability. During this study, community agencies showed an openness and willingness to become actively involved in collecting information. This gave researchers the opportunity to provide relevant education and capacity building through this engagement.

An associated difficulty was defining the LNEP itself and with this, the related challenge of attributing the occurrence of an incident to an area as small as 0.62 km in the middle of a complex urban environment. Even if a consensus about the LNEP and its boundaries could be reached, there were difficulties with routinely assigning location information for an incident. This was especially so for ED staff for whom the location of an injury incident was likely to have little relevance for patient treatment. This information was unavailable to triage nurses or diagnosing clinicians for many reasons. Again, comprehensive engagement and education of key people responsible for collecting the information is crucial for reliable data collection. This has been possible in this study due to the sound relationships between researchers and ED personnel in particular.

Not the least of the methodological problems was that of having reliable estimates of the denominator population. In this study, the ideal denominator is the population in the LNEP summed over the time period. It is possible that every patron of the LNEP at any given time is at risk of person-to-person violence. The 26 premises licensed to trade after midnight in the Cairns LNEP can trade for a total of 3,100 hours per week and they have a total authorised capacity of around 18,000 people at midnight on Fridays and Saturdays. After the 'lockout' at 3 am, the eight premises still licensed to trade can legally host around 4,700 people for a further two hours. Of course, these premises are seldom fully occupied. Estimating the person-hours of participation in even the very small Cairns LNEP with all its available resources would be a considerable challenge.

Despite these challenges, this study has achieved a number of new outcomes. First and foremost was that the research found a way for ED data to be made available in a de-identified fashion. This data was shared with other community agencies to consider targeted intervention strategies for the Cairns LNEP. The unique computer-based project was designed and implemented on the existing EDIS in the Cairns Base Hospital ED. It gathers data using triage nurses and other clinicians' knowledge and impressions, with no clinical diagnosis or other note made about a patient including their involvement in an assault or whether they were intoxicated. After the data are passed to the researchers, the linking records are deleted from the hospital computers making it impossible for the data in the researchers' hands to be linked with any patient. All other data coming to the researchers is de-identified, eliminating the prospect that any patron in the Cairns LNEP would be identified.

A significant achievement of the study is that it has established a prospective data capture mechanism that is low cost and involves no intrusion for any patient or LNEP patron. The data capture mechanisms used in this study were recently re-established in Cairns for a follow-up study with no concern expressed about the resources needed to compile the data.

Can this approach to monitoring and surveillance be used to evaluate the effects of targeted strategies? The approach could be used with certain provisos given the difficulties of estimating the denominator population at risk of person-to-person violence in the LNEP, difficulties in detecting or observing incidents exhaustively, as well as difficulties in attributing an incident to a specific location.

First, it is recommended that 'serious' incidents are the focus of any evaluation. These are likely to be the more significant in social and clinical terms with more reliable data about their occurrence. Further research is required to ensure that the indicators of a serious incident used in this study are valid.

Second, it is recommended that research be conducted to find suitable measures of a denominator population that are least subject to contextual fluctuations. In terms of the social consequences, a decrease

in the absolute number of incidents occurring on average over a period of time will be a success for any intervention strategy. However, unless a suitable denominator is used to compare rates, it will not be known for certain that the intervention strategy caused the change or whether the change happened for wider social and cultural reasons. To increase internal validity, research needs to be conducted to validate applying a definition of a 'serious' incident, across the various information sources.

Third, it is recommended that evaluation research should include a continuous quality improvement component in a community-action framework to engage with the community of stakeholders and consumers in LNEPs like Cairns.

## Summary

The preceding study is unique in the literature. It is the first time a surveillance approach across multiple agencies with a focus on the ED has been used to compile strategically useful data on incidents of person-to-person violence in a LNEP. The data were collected at very little expense or impost to participating agencies, were shared across agencies and made sense to those responsible for managing issues of alcohol and violence in the city. Importantly the data are readily accessible and pertain to patterns of incidents that are recent in the minds of key stakeholders. Because the information is accessible it has already influenced community decisions relating to targeted strategies.

The data still have major limitations to be addressed, especially the issue of the appropriate denominator for calculating rates which can be compared across time. While establishing the mechanisms for this kind of surveillance, further research needs emerged. First, what became apparent was the role of the Cairns Regional Council's CCTV system and its value for preventing and limiting the consequences of violence in the LNEP. The study reported next describes the estimated impact of CCTV combined with street-based security on reducing the workload that this kind of violence creates in the city. Second, the role of security officers has also emerged as important for addressing violence on the street and inside licensed venues. Finally, compiling data for April, May and June 2010 has provided the opportunity to design an intervention trial using the 2010 data as a baseline and providing the opportunity to sustain the collaborative approach to intervention in the city.

## 4. Potential roles for others: CCTV

### Study 6

*The role of an open-space CCTV system in limiting alcohol-related assault incidents and injuries in a LNEP in a tropical Queensland city: Cairns 'CitySafe' function closed circuit television and on-the-street security*

#### Introduction

Preventing injuries due to alcohol-related violence in inner-city entertainment precincts is an ongoing public health issue (Queensland Law Justice & Safety Committee 2010; Finney 2004; WHO 2009). The use of closed circuit television by local authorities to monitor open space in LNEPs has become widespread (Norris et al. 2004; Wilson 2008). Most CCTV systems in Australia and the United Kingdom are used to reduce alcohol-related violence and disorder (AIC 2009; Gill & Spriggs 2005; Wilson & Sutton 2004), but evaluations of the effectiveness of these systems in reducing injuries are hard to find (Norris et al. 2004; Wilson 2008; AIC 2009; Wilson & Sutton 2004; Gill & Spriggs 2005; Taylor 2010). Operational practices in open-space CCTV camera rooms have been identified as critical for promptly detecting antisocial behaviour and violence (Wilson & Sutton 2004; Gill & Spriggs 2005; Keval 2006) and is a growing area of research (Keval 2006; Gill et al. 2005; Wilson & Wells 2007). Evidence suggests violence in LNEPs is a staged process (Barker 2010) and that observers of CCTV footage can differentiate between behavioural sequences ending in violence and matched sequences which do not (Troschianko et al. 2004). Real-time communication between the monitoring room and on-the-ground security has made it possible for security to be deployed rapidly to the site of an assault, offering considerable potential to limit physical harm. Importantly, evidence suggests that city trauma services experience less assault presentations when these processes are in place (Sivarajasingam et al. 2003).

A pilot study examined CCTV camera operators' reports and observed camera room and street security operations in a regional city LNEP in tropical Australia. It observed the direct effects of the CCTV system in reducing the impacts of violent incidents in the LNEP. Selected case studies illustrate processes involved. The potential for further reductions and recommended strategies to achieve this are discussed in this study.

#### Methods

##### Setting

Cairns Regional Council won International Safe Communities (ISC) accreditation in 2009, and monitors ongoing programs of injury prevention in accordance with ISC protocols (WHO Collaborating Centre on Community Safety Promotion website accessed 2011).

Cairns CCTV technology comprises 81 late-generation digital cameras, linked to computer infrastructure in a camera room. The city's LNEP is about 0.62 km and is monitored 24 hours a day. It includes several recognised violence 'hotspots', 26 premises licensed to sell liquor after midnight and three bus and taxi transport hubs. The CCTV camera room is staffed continuously for 192 hours a week by at least one operator. A second operator is rostered on during three eight-hour shifts on weekend evenings. Operators have constant radio contact with street and venue security and a live feed to the police communications room. Up to eight street security officers patrol on weekend nights. CCTV observation of an incident can be initiated by the camera operators, or by requests from police or security via phone or radio contact.

## Data sources and analysis

### *Security Incident Management System (SIMS)*

Camera operators categorise and log incidents of concern in the SIMS database. Each entry is automatically linked with segments of camera footage. The system offers operators 41 'incident types' including the category of 'alcohol-related assault.' For nine days in late August (2010) and 13 days over Christmas/New Year (2010–11), the footage and associated SIMS reports of all incidents logged by camera operators were viewed by authors who independently recorded observations of each incident. Every individual incident of alcohol-related assault was subsequently categorised by consensus as an assault:

- which happened too quickly for the camera operators to direct street security to intervene;
- where camera operators directed street security to intervene while the assault was occurring, and
- where the sequence of events allowed time for the camera operators to direct street security to intervene before violence occurred.

Three case studies which best illustrated these incidents were selected for study.

### *Camera room observations*

Footage was viewed during a total of 18 hours in the camera room, with camera operators retrieving the footage and SIMS reports for viewing while fulfilling their observational and other duties. During this time researchers observed camera operators' actions and recorded open-ended discussions with them.

James Cook University Human Research Ethics Committee provided ethics approval for the study. The researchers adhered to Cairns Regional Council's privacy provisions.

## Results

### *Summary of camera room observations*

Peak incident periods demanded quick, efficient multi-tasking by camera operators, combined with acute situational awareness and high level observation skills. Case Study 1 is an example of such skills. Camera operators all reported they were trained 'on the job,' and relied on personal experience and intuition. Each operator categorises incidents, including 'alcohol-related assault,' according to their own interpretation, with no protocols in place to guide their decisions. Camera operators initiated the decision to observe an incident in 53 percent of the incidents, with 47 percent of observations initiated by requests from police, venue security and other external agencies. Whether external agencies attended an incident was not recorded consistently.

### *Security Incident Management System (SIMS) database*

A total of 169 incidents were logged on SIMS for 22 days. Camera operators logged 30 incidents of 'alcohol-related assault'. Other significant proportions of logged incident types included 'homelessness' (34%), 'general disturbance' (8%) and 'youth' safety issues (6%).

Eighteen of the 30 alcohol-related assaults (60%) occurred at night between midnight Friday and 6 am Sunday, with a further four (13%) occurring during daylight over the same period. Almost all assaults (93%) were by males on males. Six of the incidents (20%) escalated to involve three or more males prior to the arrival of security. The alcohol-related assault incidents were categorised as follows.

Category A: A total of 13 (43%) 'alcohol-related assault' incidents were recorded but happened too quickly for camera operators to direct street security to intervene. These incidents ended quickly with no time for any direct action to be taken by security. Case study 1 illustrates this and highlights the potential for a skilled operator, knowledgeable about the local context, to initiate actions based on minimal environmental cues.

Category B: In 12 incidents (40%) camera operators alerted street security who then intervened to curtail the violence or prevent its escalation (eg Case study 2). Three of these incidents had the potential for street security to be directed to the scene prior to the assault to prevent it from happening. In Case study 2 the

assault occurred out of the range of view of street security and would probably have continued if security had not been alerted by the camera operators. Security arrived within two minutes of being alerted. Approximately five minutes elapsed between the initial identification of the situation in the camera room and the arrival of street security.

Category C: A further five incidents (17%) had the potential for intervention to prevent violence from being initiated. Combined with the three similar incidents in Category B, which were judged as preventable and where street security intervened after violence was initiated, 27% of assault incidents could have been prevented through improved surveillance and response. In Case study 3, although street security was not alerted by the camera operators, they arrived less than one minute after the assault occurred, indicating that prevention is possible.

## Discussion

In 22 days, 30 alcohol-related assaults were logged by the CCTV system in the Cairns LNEP. In 40% of these incidents injuries were limited by system intervention. Over the same period, intervention by security could have prevented 27% of all assaults. Extrapolation from this pilot study sample suggests that if assault rates and system intervention were consistent across 2010, there may have been approximately 500 alcohol-related assaults, with injury consequences contained in 40%, or approximately 200 of these incidents. Around 27% or 130 assaults could potentially have been prevented. Although 43% or around 215 assaults may have happened too quickly for intervention, the CCTV system clearly makes a significant contribution to limiting the consequences of alcohol-related assault in the LNEP.

Research suggests most assaults in LNEPs involve a four-stage process; victim selection, baiting, violence and aftermath (Barker 2010). Case studies 2 and 3 exemplify the potential for camera operators to detect an imminent assault and also illustrate the progression of each incident through the first three stages. The victim selection and baiting stages took a total of approximately three to four minutes. Substantial evidence indicates that violence in alcohol-fuelled LNEPs can end in severe injury or death (Law Justice & Safety Committee 2010; Finney 2004; WHO 2009), a fact highlighted in an ongoing campaign by police in Australia (QPS 2011). The arrival of security on the scene during the victim selection or baiting stages may prevent initiation of any violence, including melees.

The 'on-the-job' training for CCTV operators in Cairns is concerning but consistent with reports in other studies (Wilson & Sutton 2004; Taylor 2010; Gill et al. 2005; Wilson & Wells 2007). Training to enhance camera operators' awareness of critical behavioural cues during the victim selection and baiting stages may enhance responsiveness. Using a continuous quality improvement approach, it may also reduce the time taken for security to arrive at the assault location. This may provide significant, cost-effective public health benefits where similar open-space CCTV systems are in place.

### Box 4.1 Case studies

#### Case study 1

At approximately 7.15 pm on Thursday night during an observational session, a camera zoomed in on a small gathering of people who were partly obscured by a traffic sign. The lighting was poor, but the scene was near an alcohol-related violence hotspot as it was a pedestrian thoroughfare. The camera captured the start of a scuffle in which a person was knocked to the ground. Street security was nearby and arrived before the camera room could alert them by radio. When asked why the camera had zoomed in on the obscure, poorly lit area where nothing was happening, the operator replied that he had seen 'a flash of movement'.

#### Case study 2

At 4.15 am on Saturday morning during routine scans of identified violence hotspots, camera operators noticed two bare-chested men (perpetrators 1 and 2) talking with a third man (victim). The two perpetrators had adopted an aggressive posture and were gesticulating. They walked away, then returned, continuing to shout and gesticulate for about three minutes. Perpetrator 1 then ran toward the victim, and took a flying kick at him. Perpetrator 2 also ran toward the victim. The camera operator alerted street security via radio. The victim and the two perpetrators exchanged glancing blows and then perpetrator 2 and the victim fell to the ground at the roadside and wrestled. At this point, three street security officers and two venue security staff (from a venue 300 metres away) arrived and separated the scuffling men. The arrival of street and venue security took less than two minutes from the first kick. Security restrained perpetrator 1 on the ground and verbally detained perpetrator 2 with minimal physical contact until police arrived less than five minutes later. The victim waited a number of metres away during this time then spoke with police. The footage ended.

This hotspot is 200 metres from the general gathering point for contracted street security. It is unknown whether street security was at the gathering point or attending another incident in the area. The street corner where the scuffling men fell is on a main traffic route through the LNEP. The camera operators revealed in discussion that they thought that 'anything could have happened' had security not intervened. Operators suggested examples such as: the men falling on the cement kerbing and striking their heads; those involved being hit by a passing car; or continued kicking and causing serious injury.

#### Case study 3

At 2.45 am on Sunday morning, a female and male couple were waiting at the counter in an open-front, late night takeaway food shop. Another male left a group of three other men and approached the couple. They exchanged words and the male from the group appeared to become more aggressive in his posture and verbal behaviour for approximately 90 seconds. The male and female couple disengaged and turned back to the counter while the male from the group continued to confront them. About three minutes later the male from the group punched the male from the couple in the face. Street security arrived less than one minute later and calmed the situation. It appeared neither members of the couple wished to involve police or other agencies. The group of males left the scene.

The incident took place 80 m from the main gathering point for security and 200 m from the nearest licensed late night venue. This suggests that opportunities existed for possible intervention during the four-minute period prior to the punch being thrown, and during which the situation was obviously escalating.

## Summary

The preceding study is also unique in the literature. Although the information collected was based on just a short period of time sampled, these are the first direct observations of CCTV intervention in street-based violence described in detail. Care is needed to extrapolate across an entire year. It is possible that CCTV and street security has quelled the violence in 40 percent of incidents and that 27 percent of all incidents are potentially preventable with enhanced skills among camera room operators and street security. This means that assault injuries could be reduced significantly in other environments where such a system could be implemented or enhanced. Further evaluation of the costs and impacts of such systems is needed.

Street-based security and venue security providers in Cairns have provided a model that may be regarded as good practice, as shown in the study in the preceding section. The study in the next section evaluates the Cairns security model against elements of best practice.



## 5. Potential roles for others: venue security

### Study 7

*Strategic and operational good practice for private security in a night-time economy, the example of Cairns in Far North Queensland*

#### Introduction

Security officers (often called bouncers, crowd controllers, guards or doormen) are the gatekeepers or guardians of patrons and property in the night-time economy (NTE) (Homel et al. 1992; Lister et al. 2000; Tomsen 1997). This places security officers in a unique position to monitor, manage and prevent alcohol-related injury and harm, in and around licensed venues. However, little research evidence exists to suggest that the role of security officers in the NTE has been rigorously examined in alcohol-related violence prevention and intervention strategies. Furthermore, there are few documented strategic or operational models of good practice for the training and community-based operations of private security personnel. Research is required to elevate the industry's capacity to contribute to a reduction in alcohol-related violence in the NTE. Cairns, in Far North Queensland has a model of good practice for security personnel, which encompasses both the strategic and operational levels of community-based crime prevention in the NTE. It has been operating for nearly two decades. This model includes capacity building through strategic partnerships and formal agreement through Memorandums of Understandings (MOUs), incorporating data and information sharing and coordinated, proactive interventions.

This paper systematically analyses the research literature about the one agency that works at the leading edge of alcohol-related assault in licensed venues —private security providers. It documents the community-based strategic and operational good practice for private security personnel that has been verified in the literature and which has been empirically related to a reduction in alcohol-related assault in and around licensed venues. These elements of good practice are compared to the documented practices of the Cairns NTE security industry and actions recommended to improve the capability of security providers to reduce injuries arising from alcohol-related assault. The study also documents their involvement in capacity building and ongoing training, which is contributing to the professional status of the Cairns City security providers. This paper proposes that the Cairns model of strategic and operational good practice for security personnel contributes to addressing gaps identified in the research literature. As a venue security manager stated, '... trouble is in our face all night' (Security Manager 02): 'trouble does not come to street security - they have to look for trouble'.

#### Literature review

Three different types of security personnel are involved in the NTE. These are venue security—those working on the door and inside licensed venues; street security—those patrolling the streets, roadways and open spaces, and closed circuit television camera operators. The CCTV operators will not be discussed in this study, see Taylor (2010) for a critical discussion on this subject and Pointing et al. (2012a) for a Realist Evaluation of operator and management good practice. Venue security staff have the unenviable contractual obligation of maintaining peace and harmony among patrons in licensed venues, and protecting and preventing physical and structural harm to both persons and property within that venue (Parker & Hagan-Burke 2007). Venue security supervises and monitors structurally designated areas (ie the licensed venue in

which they work) as well as monitoring and managing antisocial behaviour and disorder within these confines. The roles and responsibilities of street security officers, however, are different to venue security. These guardians of the night are tasked with preventing, managing and intervening in antisocial behaviours and alcohol-related violence in open spaces (Victoria Police 2007). Street security is responsible for keeping the good order of the inner city intact and monitoring and preventing property damage according to the CitySafe Officer of the Cairns Regional Council (2011).

An extensive search of the literature found only one report that specifically documented the practices of private security personnel. The Victorian Police Licensing Service Division (2007) produced an extensive report into security best practice for the effective management of people in licensed venues in Melbourne. Two comprehensive reports (Roberts 2004; Stockwell 2010) offer reviews of best practice models for a whole-of-community approach, and one report offers a whole-of-community approach to alcohol-related assault in the NTE (Downtown Late Night Task Force 2009). Elements of these reports include best practice recommendations for private security personnel. As these were the only reports found that specifically addressed strategic and/or operational practices for security personnel, the following evaluation is based around these four reports.

Security providers working within licensed venues are the 'principal gatekeepers (Lister et al. 2002) of licensed venues within the NTE and have also been traditionally cited as the instigators of many incidents of alcohol-related violence (Hobbs et al. 2005; Graham et al. 2006). Others, however, have argued that role-specific and operational training (Hommel et al. 2004), effective communication training and drug and alcohol awareness training (Victoria Police Licensing Services Division 2007) would substantially increase the ability of security personnel to effectively deal with alcohol-related injury and harm. Hommel et al. (1992), Graham & Hommel (2008) and Toomey et al. (2004, 2008), included security officers in their alcohol-related violence interventions in and around licensed premises.

However, only a few studies have sought a model of good practice for security personnel in regards to effective management within and around licensed venues in the NTE (VPLSD 2007). Noticeably absent in the research is an examination of the strategic and operational procedures and processes of private security personnel in community-based interventions. The specific roles and responsibilities of security personnel who work within the NTE have also received little to no attention in the literature, except in relation to further regulation (VPLSD 2007). There is also a disconcerting lack of research involving security issues specific to the NTE, such as: duty of care, risk management approach to staff and patron care, code of conduct, local laws and regulation, interactions with other service agencies, data and information sharing, incident recording and reporting, and functions and resource procedures for security personnel.

Training deficits have been consistently cited (Lister et al. 2002; Newton 2011; Stockwell 2010), however, literature proposing a way of rectifying this issue is difficult to find. Similarly there is no mention of how security personnel could operate effectively within a community-based prevention setting. Other issues that need to be addressed urgently are: designated training on the effects of drug and alcohol and how to deal with alcohol and/or drug-related emergencies (VPLSD 2007), increased role-specific training for security personnel that enables them to deal competently with intoxicated and aggressive patrons (Prenzler & Sarre 2008), and protocols and documented processes between differing security personnel (ie venue, street patrols, CCTV) on how to deal with specific incidents (VPLSD 2007). The Victorian Drugs and Crime Prevention Committee has stated, however, that '... security staff can play a greater role in working with police to reduce alcohol-related violence and other harms in licensed venues' (2010).

It has also been argued that training for venue managers which looks at the legislation and regulations governing the work of security personnel would benefit security personnel (VPLD 2007). It has been postulated that younger licensed venue managers are problematic in that they are overly-enthusiastic in their attitude to problem patrons and how security personnel deal with them. They also lack management knowledge about the role of security in venues (VPLSD 2007; Toomey et al. 2008). Many researchers have proposed more inclusive regulatory practices (Prenzler & Sarre 2008; Jones et al. 2011) and management practices (Hughes et al. 2011; Fleming 2008). They have criticised security training and capabilities, however

they have not specifically addressed the strategic and operational processes and practices of private security in the NTE (Lister et al. 2002; Heung et al. 2010).

## Method

### Setting

Tourism is a major contributor to the economy of Cairns, and the UK is the single largest market for Cairns tourism with 27 percent of all UK visitors to Australia visiting the centre (TTNQ 2010).

### Data collection

The qualitative data collection method included semi-structured interviews, focus groups, researcher observations and feedback sessions to participants.

### Participants

Participants included managers and staff from local security providers in Cairns, the CitySafe Officer (Cairns Regional Council), the Inner City Facilities Manager (Cairns Regional Council), local QPS officers, a top-level local police inspector, licensed venue owners/managers, hoteliers and other stakeholders (eg public bus service manager, taxi service manager, local lawyer, liquor enforcement officers) involved in local committees to address alcohol-related violence in Cairns. Focus groups included local stakeholders, committee members, security managers, supervisors and security officers.

### Data collection process

The focus groups were held as scheduled meetings, with semi-formal agendas to address issues involving alcohol-related violence in Cairns City. Observation sessions were held over different days, including regular weekdays and Friday and Saturday nights. The operations of venue security and street security were observed and documented during these sessions. Feedback sessions were held about once a month to share information from the research with key stakeholders and involve them in prevention initiatives. These feedback sessions also included discussions around the research and its outcomes as well as strategic planning with stakeholders. In total, researchers conducted eight formal interviews, attended numerous meetings, conducted three major focus groups and held 36 informal interviews.

### Data analysis

The qualitative data were collated and analysed by major themes and sub-themes using a standard thematic data analysis approach.

**Table 5.1** Good practice model: private security providers

Regulatory requirement and good practice	Recommended	Cairns model	
	Literature	Venue security	Street security
Mandatory training of venue and street security officers	√	√	√
Code of practice	√	√	√
Criminal history checks	√	√	√
Uniforms and identification numbers	√	√	√
Knowledge of legislation and regulation	√	√	√
ID checks at the door before entry	√	√	N/A
ID scanners in clubs	√	√	N/A
Level 2 first aid certificates	√	√	√
Procedures in place for misconduct	√	√	√
Responsible Service of Alcohol (RSA)	√	√	N/A
Control of entry and exits	√	√	N/A
Incident and report writing	√	√	√
Security personnel to patron ratio	√	√	√
Risk-assessment management plan	√	√	√
<b>Strategic management and good practice</b>			
Hierarchy of management	X	√	√
Ongoing training for ground-level staff	√	In progress	In progress
Community-based with local focus	√	√	√
Attend strategic community meetings	X	√	X
Attend operational community planning	X	√	√
Weekly in-house planning meetings	X	√	√
Focus on underlying problems—proactive security	√	√	Currently up-skilling
Designated roles and responsibilities	√ (x 1)	√	√
Specific health and safety issues	√	Partly	Partly
House policies and practices	√ (x 1)	√	N/A
Duty of care	√ (x 1)	√	√
Functional procedures in place	X	√	√
Training incentives	√ (x 1)	In progress	X
MOUs and data sharing	X	√	√
Data sharing	√	√	√
In-house training	√	√	√
External training	X	In progress	In progress
Transparency of operations	X	All the time	X
Collaborative planning with police	√	√ On-going	√ On-going
Use of video surveillance	√	√	√
Up-skilling of staff—training	√	In progress	In progress
Safety audits	X	√	N/A
Shared good practice	√ (x 1)	√	√
Patron banning and monitoring	X	√	√
Evidence-based planning	√ (x 1)	√	√

**Table 5.1 (continued)**

Regulatory requirement and good practice	Recommended	Cairns model	
	Literature	Venue security	Street security
<b>Operational management and good practice</b>			
Two-way radio contact for security	√	√	√
Two-way radio contact with police	√	√	√
Collaborative training with police	√	X Negotiating	√
Active use of diffusion techniques	√ (x 1)	All the time	Sometimes
Training for effective communication	√	√ Currently up-skilling	√ Currently up-skilling
Two door staff on at all times	√ (x 1)	√	N/A
Security patrolling areas after close	√	√	√
Mobile security working in pairs	√ (x 1)	√	√
Assisting each other when needed	√ (x 1)	√	√
Close supervision of newly trained staff	√ (x 1)	√	Partly
Operational procedures and processes in place	X	√	√
Monitoring taxi ranks at closing time	√	√	√
Monitoring patron numbers	√ (x 1)	√	N/A
No glass outside venues	X	√	√
Use of CCTV (venue and open space system)	√	√	√

N/A = Not Applicable; √ (x 1) = only mentioned in one reviewed article/report; √ = mentioned/operational; X = not mentioned/operational

## Results

The elements of good practice illustrated in Table 5.1 were obtained through a methodical literature search which resulted in only two literature reviews and two government reports being selected and also includes the results of this current research study. Results from the literature review are in the left hand column and results from our research are indicated to the right of the table, under the Cairns model. A comprehensive discussion of these findings follows.

Legislation regulates the operations of private security providers in Queensland prescribing:

- mandatory training requirements;
- completion of a Level 2 First Aid Certificate;
- provisions requiring distinctive identification as a security provider (uniform and identification numbers) during the completion of duties, and
- licensing obligations and penalties for failure to comply with these requirements.

Relevant acts and regulations governing the operations of security providers working in licensed venues and street patrols in Queensland include: the *Security Providers Act 1993* (Qld); Security Providers (Crowd Controller Code of Practice) Regulation 2008; Security Providers (Security Firm Code of Practice) Regulation 2008; Security Providers (Security Officer—Licensed Premises—Code of Practice) Regulation 2008 and the Security Providers Regulation 2008. These legislations and rules, which can be found at <http://www.legislation.qld.gov.au/OQPChome.htm> are under the control of the Office of Fair Trading (OFT) which sits under the Department of Justice and Attorney-General, Queensland and are enforceable by the Office of Liquor, Gaming and Regulation (OLGR).

Training standards in Australia vary between states and territories, however the Council of Australian Governments is moving towards a national licensing framework. Mandatory training in Queensland includes study modules as required by the OFT (see Appendix 1 for the list of required training modules) and are

implemented by security trainers in-house and/or through registered training organisations (RTO). This includes 30 hours of face-to-face, class-based training at an RTO and six months of on-the-job supervision in order to obtain a basic crowd controller security licence (Toomey et al. 2008). Licensing also includes a criminal history check and, as of 3 October 2011, compulsory fingerprinting (OFT 2010). Licensed venue security is also required to complete the Responsible Service of Alcohol (RSA) training, known in the United Kingdom and Canada as Responsible Beverage Service. It must also complete Control of Entry and Exits training and Incident and Report Writing training. Penalties for providing unlicensed security services in the Queensland industry range from \$50,000 to \$500,000 and apply to individuals and companies providing or engaging unlicensed security.

In December 2010, the Queensland Government made changes to the *Penalties and Sentencing Act 1992*, the *Bail Act 1980* and the *Liquor Act 1992* enabling police, magistrates and liquor accords to ban problem patrons from venues and city centres (OFT 2010). Security providers are also required by legislation to uphold a code of conduct, with procedures in place for addressing misconduct issues. The code of conduct is written by the security firm, but must be approved by the OFT. Licensed venue owners/managers are also required to carry out a risk assessment management plan, which is conducted by a licensed risk assessment officer (OFT 2010). This is covered by Section 51 of the *Liquor Act 1992* (Qld) and includes factors such as: responsible service of alcohol, transport services, security lighting, dealing with unduly intoxicated and disorderly patrons on the premises, dealing with minors on the premises, training of staff, designated outdoor smoking areas, and the number of patrons on premises.

Further recommendations from the literature for operating security personnel in licensed venues, includes stringent identification checks at the door; the use of electronic identification scanners and guidelines for a security personnel to patron ratio (Stockwell 2010); awareness training of the effects of drugs and alcohol on patrons and first aid training specific to drug and alcohol medical emergencies (VPLSD 2007). The enigmatic 'duty of care' (Toomey et al. 2004), is thus interpreted that venue security officers are responsible for monitoring the safety of patrons outside of the venue within 50 m of the front of the premises. In addition, venue staff members are also responsible for monitoring the area around the venue after closing. This is to ensure that patrons leave the area safely and that antisocial behaviour and violence does not occur near the venue after closing time. Again, this is part of security's duty of care. It is a moral/civil one as it is not written in legislation or regulation (OFT 2011), but is taken seriously by security due to the possibility of prosecution for negligence. These regulatory practices cannot be applied effectively unless they are implemented through strategic and operational planning.

## Strategic practices

Research suggests that for a community-based crime prevention strategy to be practicable and sustainable, it needs to be evidence-based, management focused and requires innovative problem-solving and flexible organisation (Klauser 2007). Very little was found in the reviewed literature about strategic planning practices regarding private security operations, however, it is a crucial component of any industry (VPLSD 2007). Issues of alcohol-related assault have been addressed in Cairns for nearly two decades under the strategic planning of the Cairns City Liquor Accord (Cairns City Licensee Safety Association or CCLSA), the Cairns CBD Safety Summit, and the Community Safety Committee (CSC).

Working very closely together within these strategic committees to ensure the safety of patrons in and around licensed venues in the CBD are the private security providers in Cairns, venue owner/managers (under the CCLSA), the Queensland Hoteliers Association (QHA), the Cairns Regional Council (CRC), QPS, OLGR, the QPS's Liquor Enforcement and Proactive Strategies unit, and public transport providers. See Figure 5.1 for an outline of the committee members and structure. Private security management attends meetings of these committees to help develop and implement interventions to reduce alcohol-related, antisocial behaviour and violence issues in the NTE and to pre-empt upcoming large events and pertinent issues. These strategic planning meetings take a risk management approach. This involves identifying specific existing and possible risks to patrons and property, identifying risk tolerance levels (what level of risk is acceptable and what level

is not) and identifying risks that may be reduced or removed (eg removal of outside tables and chairs at midnight) (Queensland Security Providers 2010).

The Cairns City model of good practice for security providers is based on the principles of strategic and operational risk management, with a MOU being signed across service agencies (both government and non-government). The MOU incorporates strategic data-sharing across all agencies to inform prevention strategies. The attending managers then operationalise the resolutions of these three strategic committees (see below—operational practices). One company (QSP Security) provides security for most licensed venues in the Cairns NTE (18 out of 26). The operations manager of this company and the CRC contract manager of the street security and camera operators (ISS) are both familiar figures at all the strategic planning meetings of the above networks.

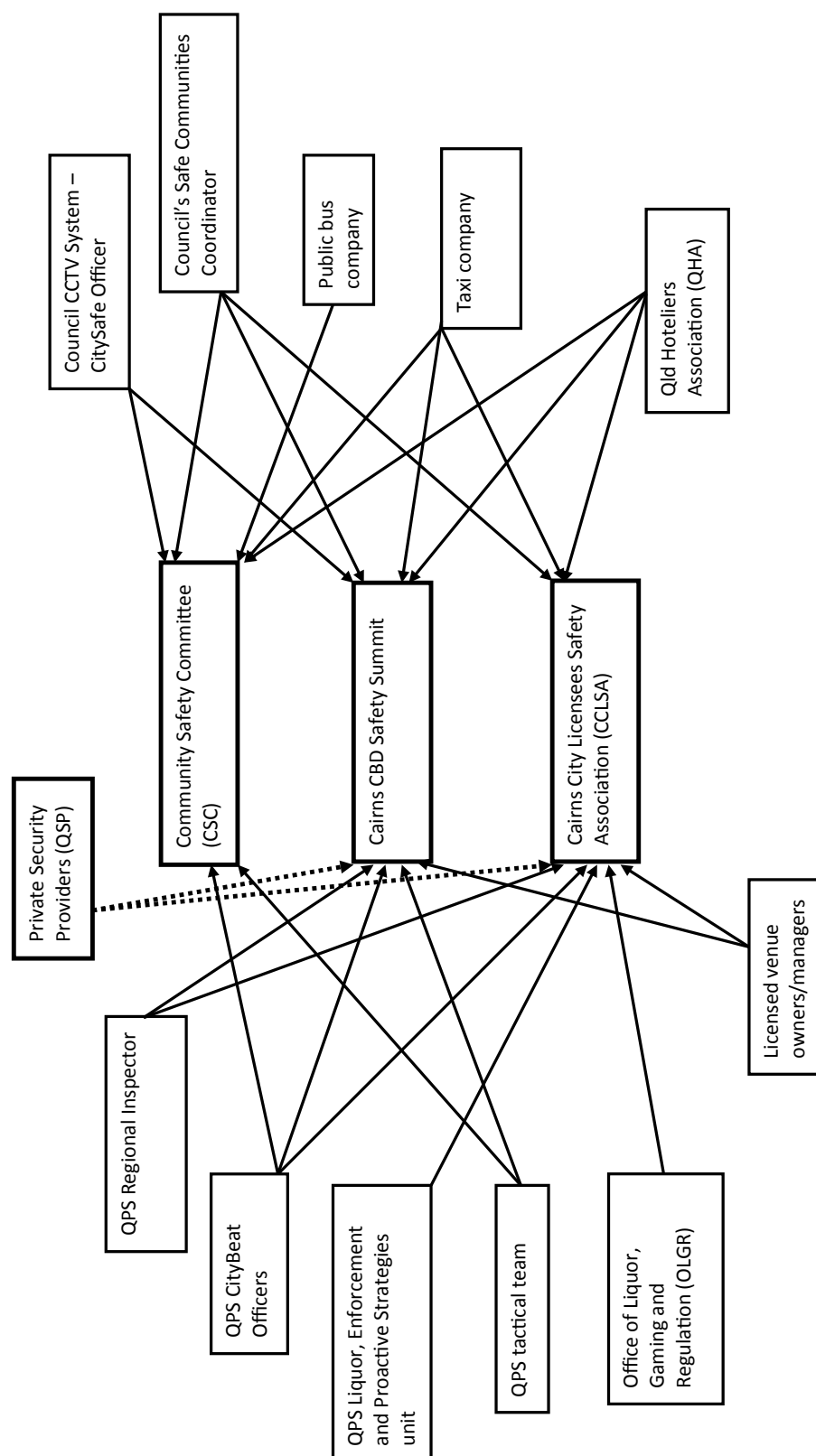
The close working relationship between Council, ISS and QSP resulted from the signing of an MOU between Council, ISS and QSP in 2004 (CitySafe Officer 2011). This was designed to facilitate shared cooperation, collaborative intervention strategies and data and information sharing. This MOU was recently updated and amended in 2010, to address some recent disparities in process protocols that had arisen between the security officers working on the ground and in venues. The MOU between Council and the security providers also allows street security to enter venues to assist venue security and conversely allows venue security to help street security, if required. This became necessary as a rapid response to incidents was needed and delays were sometimes experienced waiting for the police (Toomey et al. 2008). The MOU has also allowed for information and data sharing between the two security providers and the council. This MOU clearly outlines roles, responsibilities, duty of care and process protocols to be followed by the agreeing agencies. This ensures that all agencies follow the same operational practices and protocols. This collaboration is further strengthened by the real-time communications between all security and the police.

The diagram illustrates the structure of the Cairns City community-based crime prevention model involving private security personnel. It shows the following entities and their interactions:

- Central Entities:**
  - Community Safety Committee (CSC)
  - Cairns CBD Safety Summit
  - Cairns City Licensees Safety Association (CCLSA)
- Government and Council Entities:**
  - Council CCTV System – CitySafe Officer
  - Council’s Safe Communities Coordinator
  - Public bus company
  - Taxi company
  - Qld Hoteliers Association (QHA)
- Law Enforcement and Regulatory Bodies:**
  - QPS Regional Inspector
  - QPS CityBeat Officers
  - QPS Liquor, Enforcement and Proactive Strategies unit
  - QPS tactical team
  - Office of Liquor, Gaming and Regulation (OLGR)
- Private Security and Venue Owners:**
  - Private Security Providers (QSP)
  - Licensed venue owners/managers

**Interactions (Arrows):**

- QPS Regional Inspector** connects to **QPS CityBeat Officers**, **QPS Liquor, Enforcement and Proactive Strategies unit**, **QPS tactical team**, and **Office of Liquor, Gaming and Regulation (OLGR)**.
- QPS CityBeat Officers**, **QPS Liquor, Enforcement and Proactive Strategies unit**, **QPS tactical team**, and **Office of Liquor, Gaming and Regulation (OLGR)** all connect to the **Community Safety Committee (CSC)**, **Cairns CBD Safety Summit**, and **Cairns City Licensees Safety Association (CCLSA)**.
- Private Security Providers (QSP)** connect to the **Community Safety Committee (CSC)**, **Cairns CBD Safety Summit**, and **Cairns City Licensees Safety Association (CCLSA)** via dotted lines.
- Licensed venue owners/managers** connect to the **Community Safety Committee (CSC)**, **Cairns CBD Safety Summit**, and **Cairns City Licensees Safety Association (CCLSA)**.
- Council CCTV System – CitySafe Officer**, **Council’s Safe Communities Coordinator**, **Public bus company**, **Taxi company**, and **Qld Hoteliers Association (QHA)** all connect to the **Community Safety Committee (CSC)**, **Cairns CBD Safety Summit**, and **Cairns City Licensees Safety Association (CCLSA)**.





## Operational practices

### *Training*

It should be noted that there is no standardised training for security officers in Australia (Prenzler et al. 2007–08), nor in other countries at this time (Eddy et al. 1993; Manley et al. 2005). Security officers are not required to undertake extra training in Australia or the United Kingdom, other than their mandatory training to obtain and continue their licenses (Prenzler 2007–08; Manly et al. 2005). Lister et al. wrote specifically on this subject in 2002, however, it is disquieting to recognise that this is still very much the case in these two countries today (Stockwell 2010; van Steden & Sarre 2010).

Private security providers' involvement in strategic partnerships in Cairns City and their involvement in MOUs have enabled them to build capacity and improve the skills of their personnel. Training workshops with QPS and consultations concerning legislation and regulation from community sources are but a few of the benefits security personnel have received, due to their involvement in these strategic partnerships. Security personnel have also recently been receiving independent psychosocial training to upgrade their ability to recognise and deal with alcohol-related violence through body language training, alcohol and drug training, perception and attention and non-aggressive handling of aggressive, intoxicated patrons (Hayes-Jonkers et al. 2011).

Security personnel and the police attend joint training workshops, which involves the sharing of good practice models and procedural information. These training workshops are held once every two months and are ongoing. The workshops were designed to overcome the public police/private officer divide (Green & Plant 2007) between the two service sectors. These partnerships have made possible the coordinated operations between the police and private security in Cairns City. Both ISS and QSP train their own staff in-house. This difference in in-house operations in Cairns City has been partially overcome due to shared workshops, agency consultations and also the collaboration and data information sharing by the two security providers.

### *CCTV and street operations*

The Cairns Regional Council operates an extensive CCTV system, which private security camera operators (ISS) monitor 24 hours a day, seven days a week. Council contracted private security officers (ISS) also operate foot and vehicle patrols in the inner city around the clock seven days a week, with extra staffing at peak periods. These officers are directed by the operation's manager of ISS, who works in conjunction and collaboration with the Council's CitySafe Officer. On a day-to-day basis, however, the ISS officers in the camera room and on the ground are informed and directed by the CitySafe officer (CSO). According to the Inner City Facilities Manager street security patrols have been operating in the Cairns City CBD since the very early 1990s and the first CCTV cameras were installed in the CBD in 1994.

### *Venue security*

Private security officers also monitor licensed venues in the NTE in Cairns City. Most of these venues hire security officers through the Queensland Security Providers (QSP), with only two venues possessing in-house security. Thus, QSP supplies most of the security officers to the 24 venues that are open in the inner city past midnight.

### *Real-time communication network*

The CCTV camera operators, street security, venue security and the QPS, all have radio contact with each other on the job. This radio contact ensures a rapid response by security and police to incidents inside, immediately outside and in the vicinity of, licensed venues. The CCTV monitoring room has direct phone contact with the QPS CityBeat office (in the CBD) and the QPS communications room, and live video footage feed through to the CityBeat office and QPS communications room so that the police can view incidents as they occur. Police patrol the CBD by day and night on foot, by motor-vehicle, on bicycles and motor bikes (trail bikes). The three agencies (ISS, QSP and QPS), through cooperative planning, have also created a specific line of process for incidents. That is, there is a critical time when the police are called, and not before.

An incident must reach a certain point of concern before the police are involved. A clear process indicates when to radio for assistance from the other agency. The two security providers and in-house security have also developed a consensus process for dealing with medical emergencies in and around licensed venues.

### *Workplace health and safety and career progression*

It has been noted that community-based interventions often fail due to critical persons leaving an agency (Conway et al. 2007). The Cairns NTE has the benefit of having high-level security managers who have been in their positions for many years, thus sustaining the commitment of their agencies. A further barrier to an effective and highly-skilled security industry, is the high turnover of lower-level staff (VPLSD 2007). It has been proposed that this is due to low levels of pay, uncertain work hours for casual staff, the lack of career prospects in security work and the physical risks involved in this kind of work (VPLSD 2007). Security personnel indicated that the fear of being seriously injured, disabled through injury or killed was something they thought about sometimes when large groups of patrons started fighting. It is also crucial to note that security personnel who undertake supplementary training are not rewarded in any way, either by higher pay or enhanced career prospects and this has a negative impact on retaining well-trained staff according to the Director of Queensland Security Providers (24 May 2011).

## **Discussion**

### **Strategic practices**

Of primary importance to this model of good practice is the continued commitment of high-level security management to the ongoing partnerships and continual quality improvement of the model. One of the themes that became apparent during the interview analysis was that each agency has a specific focus on crime prevention and each agency has a particular perspective or mind-set. Police focus on law enforcement, licensed premises owners focus on having safe and economically viable businesses and liquor licensing focuses on enforcement and compliance. Interestingly, private security personnel in Cairns do not have a tunnelled focus on crime prevention. Although their job requires them to participate in prevention and intervention, there is no structured, communal perception of this among personnel. Differing views were expressed by individual security staff as to what their job entailed and what the overarching focus of their job necessitated. Given the specific motivational focus of participating agencies and the corresponding discrepancies in their foci, it is not surprising that collaborative efforts of these agencies are fraught with barriers and perceptual stumbling blocks.

### **Operational practices**

#### *Street security*

Council-engaged street security in Cairns is contracted with the unenviable task of patrolling and monitoring large open-space areas in the NTE. Personnel stated that they are constantly criticised, and commented that ‘... people just don’t understand what we do and we are criticised for what we don’t see, but we are never praised for what we actually do’. These frustrations are apparent across the board with the security personnel in Cairns, however, the real-time communication with the CCTV room, police and security has increased the capacity of personnel to deal collaboratively with incidents. The MOUs between front-line agencies has also contributed to a feeling of support within the security personnel.

#### *Venue security*

Ensuring that all bar staff and security personnel undertake training in the RSA has been forwarded as a mandatory requirement in licensed premises (Homel 2010). It has been further proposed that unless training is continued at an appropriate level, staff revert to old habits of over-serving patrons (Hughes et al. 2011; Johnsson & Berglund 2009) and security personnel are sometimes overruled by venue managers when

dealing with obviously intoxicated individuals (VPLSD 2007). The effectiveness of security personnel often depends on effective venue management, however, if this is poor, it limits the ability of security personnel to deal successfully with alcohol-related assault and injury. Moreover, security personnel are also constrained by regulations that are either not enforced or are not monitored regularly. Security personnel stated that lack of regulation enforcement made their jobs very difficult. Patrons would ignore security directions knowing that security could not enforce the order, for example, patrons being given a directive to leave a venue, but refusing to do so.

### *Real-time communication network*

Real-time communication has been forwarded as one of the more crucial elements of community-based crime prevention involving security and police (VPLSD 2007), and this was introduced in Cairns in the previous decade by the CRC. It was later updated to include venue security and recently has included the police having a security radio as well. This ensures that venue and street security and police, at any one time, are aware of any incidents occurring in the inner city. This has resulted in a fast response time to incidents with all agencies involved being able to respond at any one time (VD&CPC 2010).

### *Workplace health and safety and career progression*

The limited career progression pathway is a concerning barrier to professionalising the industry, as lower-level staff are given no incentives to seek further training or to see security as a career path. This has a serious impact on the ability of security providers to attract highly skilled and experienced staff who are able to actively and successfully contribute to reducing alcohol-related violence in inner city areas. The capacity of security personnel to reduce alcohol-related violence has been demonstrated by the Cairns model. These shortcomings must be addressed in order to further improve their ability to reduce the incidents of alcohol-related injury and harm.

## *Future directions*

More research should aim to identify the role of security providers in preventing or reducing incidents of alcohol-related assault in the NTE. It should also identify their effectiveness in implementing evidence-based prevention strategies, both at a strategic community crime prevention level, and in daily operational practices. Policy responses are needed to enhance training requirements beyond what is currently in place, for example enhancing the ability of security providers to competently recognise and deal with drug and alcohol affected individuals. Policy incentives are also needed to reward security personnel for additional training, as this will substantially increase the professionalism of the industry, and also enhance career progression. The duty of care exercised by security industry management towards their staff needs to be a focus of further policy improvements, as management appears to be failing the ground-level staff within the security industry. Policy responses are also needed to mandate and monitor increased teamwork and collaboration in community-based crime prevention models.

Nonetheless, the defining message from all the security personnel in Cairns City was team work. That included the police, liquor licensing, street security, venue security and CCTV personnel. The ability to be able to all work together cooperatively was the point stressed by all security personnel and police who were interviewed. As one venue security officer stated: 'We know that if things get out of hand, street security and the police are there to back us up. We don't do it on our own'. The continued and close-knit cooperation of these agencies is why the Cairns model of good practice for security personnel has not only been successful in strategic and operational practices, but has been sustainable over time. The agencies involved are continually finding new ways to collaborate and strengthen the model, but it should be noted that private security personnel play a crucial role in its functioning.

## 6. Design elements for a PILOT intervention trial

### Introduction

The preceding study describes the Cairns network of crime prevention agencies in detail and maps the links with security providers in a model that we believe can be considered a model of best practice. With these collaborative mechanisms in place and with the possibility for collecting data describing incidents of person-to-person violence in a prospective manner, it became possible to consider an appropriate study design to evaluate the effects of more targeted strategies. The following study outlines a suitable design for a pilot trial recognising that the data collection approach has produced pragmatic results that generally fit with local understandings of incidents and their occurrences, as well as with previous research. The Queensland Injury Prevention Council and the Alcohol Education and Rehabilitation Foundation funded this pilot study which had started at the time of writing this report.

### Study 8

***A mixed-methods approach to designing, implementing and evaluating community-level strategies to reduce alcohol-related violence in the LNEP in a regional centre.***

### *Aims and objectives*

#### **A follow-up study using the ‘Cairns model’**

Using data already compiled in Cairns during 2010 as a baseline, we aim to implement a multiple-component, community-initiated intervention to reduce the number of serious incidents of person-to-person violence and associated injuries occurring in the Cairns CBD, that is in the city's LNEP. Cairns stakeholders identified the intervention components during a feasibility study conducted in 2010. This study will evaluate the effectiveness of the proposed intervention components using both outcome and process evaluation. It will not examine the effectiveness of any one component, but rather the effectiveness of the intervention strategy as a whole. Intervention components will be community-generated but supported by published evidence wherever possible and will include:

- feedback of research results as the study progresses along with information and education with specific local content;
- situational interventions to better manage groups of people on the streets, featuring educational activities by Queensland Health's Alcohol, Tobacco and Other Drugs Services (ATODS);
- improved transport to enable quick and safe egress from the city;
- enhanced capacities to prevent incidents among security providers on licensed venues and among street-based security providers and security personnel working within the Cairns Regional Council CCTV surveillance system;
- enhanced provision of brief intervention for people with alcohol problems (supported by ATODS);
- enhanced collaboration between agencies providing victim support services;
- targeted joint operations between liquor licensing, police and emergency services;
- support for more proactive prevention by venue-based management, venue-based environmental changes and increased focus on responsible service of alcohol;

- awareness-raising among youth by key agencies, and
- a Cairns-wide media strategy.

## Definition of ‘serious incident’ used in the baseline study

In the baseline feasibility study, we used data provided by the ED at CBH, QPS, Cairns Regional Council ‘CitySafe’ CCTV surveillance and security providers on licensed premises. This near-to-real-time data collection methodology is a unique approach to surveillance of alcohol-related assaults in LNEPs. Data described all incidents of person-to-person violence occurring in the Cairns CBD during the months of April, May and June 2010. Incidents were categorised as ‘serious’ if there was:

- evidence of an injury involving at least one fracture;
- a blow to the back of the head and/or neck was recorded;
- any kind of weapon was used;
- a charge of ‘serious assault’ or of ‘assault occasioning bodily harm’ laid by QPS, or
- an ambulance transporting the victim(s) to the ED.

These criteria were chosen because they inferred a serious injury was sustained or that there was the potential for a serious injury to occur. Incidents without these characteristics were categorised as ‘not serious’. These generally included incidents where:

- victims suffered injuries with contusions, abrasions and lacerations, superficial face and head injuries or pain in parts of the injured person’s body other than the head and/or neck;
- a charge of ‘common assault’ was laid by QPS, or
- the incidents were person-to-person violence but with no apparent injury.

Our definition of a ‘serious incident’ has not been systematically validated as yet. However, unpublished data from the pilot study indicate that it effectively delineates the more serious types of incidents from among the wide range of those that we have observed in Cairns.

## Outcome evaluation hypotheses

The overall number of incidents is likely to vary over time according to changing population levels, community events and other extraneous factors and so is not a suitable outcome measure to use for comparison. However, it is possible to compare the proportions of the total number of incidents categorised as ‘serious incidents’ during the months of April, May and June 2010 as a baseline to compare with the proportion of ‘serious incidents’ that may occur during April, May and June 2011.

It is therefore hypothesised that, compared with the period April, May, June (2010), with the intervention implemented and operating in the same three months in 2011:

- serious incidents of person-to-person violence will comprise a smaller proportion of the total number of incidents that occur, and that
- serious incidents occurring between the hours of 9 pm to 4 am will comprise a smaller proportion of the total number of incidents.

## Process evaluation questions

A process evaluation will be conducted concurrently with the outcome evaluation to (i) monitor the study’s implementation, (ii) assess whether the intended effects were achieved, in order to (iii) inform the consolidation of the focused efforts being made by Cairns agencies and stakeholders. The overall aim of the evaluation is to document the processes by which collaboration for targeted intervention strategies is established so that lessons learned from this study can be used in other cities. Process evaluation questions will include the following:

- How do Cairns agencies and stakeholders work to implement targeted strategies?
- In what way are the intervention components implemented and at what times?
- What roles do Cairns agencies and stakeholders play in refining strategies and their implementation during the intervention period?
- What activities, strategies and roles do stakeholders perceive are the most effective for reducing person-to-person violence in the Cairns CBD?
- How do other contextual factors such as policies and programs from outside Cairns influence the kinds and effectiveness of interventions in Cairns?

## Rationale for the study and issues to be addressed

Assault is the most common of violent crimes with around one in twenty Australians (aged 15 years and over) having experienced an assault within the preceding year (AIC 2006; ABS 2005; Queensland Government 2010), and with half the perpetrators and around 40 percent of the victims intoxicated (Australia MCDS 2006; Matthews et al. 2002; Doherty & Roche 2003; Poynton et al. 2005). A significant proportion of alcohol-related violence occurs near small numbers of problematic licensed premises in inner-city areas, most commonly late at night or in early morning hours near the end of the week and usually among young adult males (Doherty & Roche 2003; Queensland Law Justice & Safety Committee 2010; Homel 2009). Finding ways to reduce alcohol-related violence in these environments and the injuries resulting from it remains a challenging matter of considerable public health concern (Australia MCDS 2006; Graham & Homel 2008). Twenty years of research has shown that community-wide, multi-component interventions, like the proposed intervention program, offer the best prospect for reducing this sort of violence where density of licensed venues and alcohol availability remains stable (Graham & Homel 2008).

A recent Queensland parliamentary inquiry into alcohol-related violence, and the Queensland Government's response to it, have focused on LNEPs in the inner city and urged more comprehensive research with improved data collection.<sup>4</sup> This apparent lack of comprehensive, reliable data relating to alcohol-related violence indicates that further research and more efficient, uniform collection of data is required to fully assess the prevalence and impact of, and possible solutions to, alcohol-related violence.<sup>5</sup> (p15) (LJ&SC 2010). Our proposed study answers this call.

## Background

Cairns has an active Safe Communities Committee working with several other agencies and collaborative groups committed to safety in the Cairns CBD. These stakeholders provide a natural reference group for the study as well as important intervention options.

## Incidents of person-to-person violence April–June 2010

A total of 384 incidents of person-to-person violence were recorded in the Cairns CBD during April, May and June 2010. During this period, the QPS provided information about 39 charges of assault laid in connection with these incidents. Venue security on licensed premises provided information about 29 incidents of person-to-person violence that occurred on licensed premises in the area. The Cairns Regional Council CCTV system provided information about 81 such incidents. The ED recorded a total of 235 incidents with most of the patients treated for injuries. Together these incidents in the CBD totalled 384 for the three months.

Figure 2.1 indicates that of these 384 incidents, 92 (24%) were 'serious' incidents and these were consistently recorded throughout the week in the Cairns CBD. Figure 2.2 shows that, although, 'serious' incidents were recorded throughout the day, during April, May and June 2010, these tended to occur more frequently from 9 pm to 4 am the next morning with the largest number occurring from 3 am up to 4 am, that is the hour after the nightclub 'lockout'. Fifty five 'serious' incidents took place during these times (Figure 2.2) comprising 14

percent of the 384 incidents recorded. If data for the period from noon on Saturday until noon on Sunday alone are considered the proportion occurring between 9 pm and 4 am the next morning rises to 19 percent, that is 16 'serious' incidents out of a total of 86 incidents (data not shown).

## *Research plan—outcome evaluation methodology*

### **Information about person-to-person violence (assault)**

As in the baseline study, 'assault' will be defined as interpersonal physical violence of any kind. Sexual assault will not be included because it is recognised in the literature as having a social pathology distinct from the kind of violence often seen in the inner-city, LNEP. Information about incidents of person-to-person violence will be derived in the following way for the months of April, May and June (2011).

- In the ED, a software project has already been negotiated and designed. As in the baseline study, it will be linked to the EDIS to de-identify patients. This software project uses two markers.
- Triage nurses will be asked to type 'CBD' in the 'presenting problems' screen for patients (aged 16 and over) if they have reason to believe that the incident occurred in the area defined on the map of the Cairns CBD (Figure 3.1) with which they will be provided.
- At diagnosis, the ICD10 injury codes and some alcohol problem codes will trigger a compulsory question for the diagnosing clinician: 'Do you have any reason to believe that this presentation was the result of an alcohol-related assault in the CBD?' Available answers will be: 'yes', 'no', and 'unsure'.
- For the cases flagged by 'CBD' and the 'yes' and 'unsure' categories, data will be provided describing the date and time of presentation to the ED, age and gender of the person presenting and the rich text notes from the presenting problems screen at triage.
- The Cairns Regional Council 'CitySafe' function has more than 80 high-resolution cameras conducting round-the-clock surveillance in the area defined as the CBD. Supported with information from security personnel patrolling city streets and as part of routine operations, camera room observers record details of any incidents relevant to the safety of persons in the CBD. As in the baseline feasibility study, for all incidents recorded during April, May and June, 2011, the date and time the incident occurred, the category of incident allocated by camera room operators and the rich text notes made by operators will be available. Rich text notes include information describing the approximate age and gender of persons involved in the incident. Comments and observations about perceived levels of intoxication are available where this is relevant to the incident.
- QPS will provide information about all charges laid for alcohol-related assault for incidents occurring in the defined CBD area. This information includes date and time of the incident, age and gender of those charged and the nature of the assault.
- A memorandum of understanding has already been agreed between James Cook University (JCU) and most licensed venue owners in the defined CBD. This has permitted their contracted security guards to provide information about any incident of person-to-person violence occurring on the licensed premises during April, May and June, 2010, and this will be repeated in 2011. Queensland legislation requires venue security to keep incident registers. The persons involved in these incidents are usually ejected from the licensed premises with date and time of the incident, gender, approximate age and a description of the incident recorded.

## *Research plan—community-action intervention strategies*

A combination of community-initiated strategies will be implemented. These will start before the follow-up data collection period, are aimed at raising awareness, mobilising available options for action and enhancing resolve to reduce person-to-person violence in the Cairns LNEP. These intervention components were derived from interviews with 31 representatives of key stakeholders in Cairns and from notes and observations made during formal agency meetings over a 10-month period beginning in January 2010.



## **Intervention component—progressive feedback of study results**

A hallmark of this research approach is to progressively feedback study results to support community awareness and community resolve to sustain intervention efforts (Clough 2010). Feedback of results will happen in the following forums where research results are already being provided. The Cairns City Licensees Safety Association (CCLSA) holds monthly meetings. Bi-monthly meetings are held of the Cairns CBD Safety Summit, and the Cairns Regional Council Community Safety Committee (CRC–CSC) and quarterly meetings of Cairns Regional Council Safe Communities Steering Committee. Members of the research team participate in these meetings. Bi-monthly feedback will be provided to Queensland Police Service and also to ED staff and the DABIT at Cairns Base Hospital.

## **Intervention component—situational interventions**

Situational interventions to better manage people on the street will feature health promotion and education designed to fit with the late night entertainment setting. Queensland Health's ATODS has proposed offering breathalyser tests before and after the lockout period on nights at the end of the week and to enter into the late night entertainment spirit with some modest cross-dressing to facilitate engaging with revellers to better provide harm minimisation advice.

## **Intervention component—improved transport from the city**

More seriously, in response to a recent, particularly-violent, sexual assault perpetrated on an overseas backpacker in the Cairns CBD, the CCLSA, the CRC–CSC and backpacker accommodation enterprises are developing a partnership with the local state MP to provide mini-bus transport for their patrons and guests away from the CBD. Especially recognised is the need to move people quickly and safely around closing times for some venues from about 1 am and around the lockout times (around 3 am) and up to 5 am.

## **Intervention component—security provider training**

As part of the baseline study, we were asked to provide specific training to security officers in Cairns on how to better recognise aspects of human behaviour influenced by intoxication. For this intervention component, the research team will provide training in: i) neurological effects of alcohol; ii) focused attention and peripheral vision and how to manage it to improve crowd surveillance, and iii) interpreting body language and refining perceptions of situations. This training will focus on ways to intervene in situations to reduce the risk of escalation to a more dangerous stage, or of them occurring in the first place.

## **Intervention component—enhanced capacity to provide brief intervention**

Brief intervention for alcohol problems has been recommended for patients presenting to the ED as a way to reduce repeat victimisation (D'Onofrio & Degutis 2002; Fleming et al. 2006). This intervention component will broker training in brief intervention provided by ATODS and DABIT at Cairns Base Hospital, to as many personnel as possible especially those whose work features safety in the CBD as their core business, such as security officers, police, staff in the ED, and Sunbus and Black and White Taxis.

## **Intervention component—enhancing referral pathways**

The Cairns Victims of Crime Committee and Relationships Australia (Cairns) have developed an information pamphlet advising of referral pathways and contact information for support services available for victims of crime. This intervention component will ensure that key stakeholders in this project will have ready access to this pamphlet to disseminate to potential clients. Pamphlets will be distributed through the licensed venues, the ED, by ATODS and security officers to people on the streets, by QPS, taxi and bus services, QAS and the DABIT team at Cairns Base Hospital.



## **Intervention component—targeted operations**

This intervention, targeting operations between liquor licensing, police and emergency services (Department of Community Safety), will provide intelligence to inform targeted strategies to enforce liquor regulations during the intervention period. In the past, combined operations by liquor licensing, police and emergency services have targeted licensed premises in the CBD with walk through inspections, for example ‘Operation Amazon’ in 2004–06 and ‘Operation Lucent’ in 2005–07. These agencies have already used intelligence from the baseline study to allocate operational resources and have indicated their willingness to refine these sorts of operations while this study is being conducted.

## **Intervention component—venue management**

By supporting the liquor accord, this intervention component will support initiatives for licensees with information and evidence to: i) achieve best-practice in managing the environment of their premises; ii) monitor responsible service of alcohol to patrons; iii) monitor intoxication amongst patrons, and iv) encourage best practice in managing the environment of crowds on licensed premises, for example limiting opportunities for patrons’ pathways to cross inside the venue.

## **Intervention component—support awareness-raising**

This intervention involves supporting and encouraging existing school-based delivery of safe drinking and personal protection practices. Police and non-government organisations are delivering these courses. Information from the study will be disseminated using this process.

## **Intervention component—Cairns community media campaign**

The baseline study has already received some coverage on Cairns radio stations. The lead investigator has the opportunity to present the study design and results at a series of public lectures provided in Cairns by JCU and called ‘Science at the Courthouse’. The ‘Courthouse’ is a licensed venue in the CBD, that is, at the centre of the issue this study is attempting to address. The lead investigator will have the opportunity to present at least two public lectures in the very place that is the subject of the study, providing a unique opportunity to raise awareness. Conventional newspaper and radio media will also inform the Cairns population about the intervention strategies, the findings of the study and de-identified prosecuted cases. The fortnightly e-bulletin prepared by QPS reporting on patterns of various crimes will be used to disseminate information about the interventions and the results of the study. This e-bulletin is widely read with a circulation list in Cairns of about 80,000 email addresses.

## ***Research plan—process evaluation methodology***

### **Process evaluation—consultation with key Cairns stakeholders**

Table 6.1 outlines the process evaluation methodology and Figure 6.1 outlines the timetable for implementing the intervention components and data collection.

The process evaluation design uses the Centers for Disease Control and Prevention program evaluation framework (Millstein et al. 2000). A key component of the study is context, that is, the wider social, political and economic factors (Table 6.1). Alcohol-related violence has attracted much attention recently. Novel Queensland Government-sponsored program approaches will be implemented in the next two years (LJ&SC 2010). The Commonwealth Government’s National Preventive Health Strategy is in place.

Other key components of the evaluation framework include the extent to which the strategies are implemented as proposed and the dose delivered and does received, that is, the extent to which Cairns agencies actively engage with, and are committed to the intervention strategies (Steckler & Linnan eds 2002).

For the dose received it will be important to assess key agency responses and reflections. These will be documented using data from interviews during the operating phase.

**Table 6.1** Process evaluation plan

	EVALUATION QUESTIONS	DATA SOURCES	TIMING OF DATA COLLECTION	DATA ANALYSIS - SYNTHESIS
<b>DOSE RECEIVED</b>	1 How do Cairns agencies/stakeholders work to implement targeted strategies?	Interviews and consultations with stakeholders	Observations and interviews during implementation phase	Thematic analysis
	2 What types of activities and timing for implementation?			Compile into spreadsheets
	3 Roles for Cairns agencies and stakeholders for determining strategies?			Narrative description of observations and interviews
	4 What types of activities and strategies are most effective?			
<b>CONTEXT</b>	5 How do contextual factors influence the kinds and effectiveness of interventions	Interviews and consultations with stakeholders	Observations and interviews during implementation and operating phases	Narrative description of observations and interviews
		Records of meetings and communications	Observations in all phases of the study	Summary of observations and communications

Interviews with representatives of key Cairns agencies will be semi-structured. Face-to-face interviews will be conducted during the operating phase of the study (weeks 16–24) (Figure 6.1). Feedback of study results will be ongoing, taking the form of regular reports of the results of the prospective data collection. In the first six weeks of the study, data capture mechanisms will be put in place and negotiations conducted for a collaborative approach to targeted interventions so that by week eight, the interventions and data capture mechanisms and their stability can be examined prior to the outcome evaluation data collection in April, May and June (Figure 6.2).

**Figure 6.1** Timetable for a 36-week study in Cairns in 2011

IMPLEMENTATION PHASE												OPERATING PHASE - INTERVENTION and DATA CAPTURE												Data analysis, write up, feedback			
Month	January			February			March			April			May			June			July			August					
Week	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36									
Staff recruitment	Negotiate targeted intervention strategies and suitable timing						Implement targeted intervention strategies						Data collection and compilation for outcome evaluation						Feedback study results						Concluding meetings		
	Establish data collection mechanisms						Test data capture procedures						Maintenance of intervention strategies														
													Interviews with key Cairns stakeholders and agencies														

## Research plan—data management and analysis

### Process evaluation data

All process evaluation data will be coded and entered into NVivo® qualitative data analysis software. Interviews, observations and feedback and logs of communications and observations will be combined and summarised by synthesising key themes or using frequency distributions and cross-tabulations where data permit. Social network analysis will also be used to document and analyse the social resources mobilised by the community-based intervention network, following methods used by Hanson et al. (2008). This will include analysis of in-kind, human and financial resources shared by network members. This will help to make the results of the study replicable in other Queensland 'Safe Communities'.

### Outcome evaluation data

Data from the ED, CRC, QPS and venue security providers will be entered into a spreadsheet and a probabilistic linkage approach will be used to identify incidents recorded by more than one of the sources of information. Data will be tabulated and arranged for graphic representation using Microsoft Excel®.

Comparisons will be made, using simple graphical and tabulation approaches, between April, May and June 2010 with the data collected in this study for the same period in 2011. The measures to be compared are: i) the proportion of the total of all incidents that are 'serious' and ii) the proportion of the total number of incidents occurring between 9 pm and 4 am that are 'serious'. All data will be retained and stored for the requisite length of time consistent with JCU's data management protocols. Investigator Clough will oversee all data analysis and data management.

## *Research plan—ethical considerations and risk management*

Both the Cairns and Hinterland and the James Cook University Human Research Ethics Committees provided ethics approvals for the study. Securing ethics approvals for the follow-up study should not be problematic. Patrons of the Cairns LNEP will have few ethical or legal risks because they will not be identified to the researchers. Information and opinions to be collected in the process evaluation interviews, and information collected from representatives of key agencies in Cairns, will also be de-identified. Knowledge about the number and types of alcohol-related assault incidents gained through this study could help to bring about a reduction in the risks of injury and could ultimately benefit all the study subjects as well as Cairns agencies and stakeholders.

## *Research plan—timeline*

Figure 6.1 shows the timeline for the study.

## *Outcomes*

This study is unique: it features a community-initiated intervention that is also community-driven so that the involvement by the researchers in providing intervention components is largely indirect. This means the intervention components will be more sustainable as they are community-inspired and community-owned. The feasibility study established considerable capacity and willingness among Cairns agencies to collaborate in targeted interventions such as those proposed. A coordinating research vehicle, such as this study, will strengthen this capacity and willingness. The proposed research provides an opportunity to test the Cairns community's strategies. Evaluation research can reinforce and refine the implementation of the proposed strategies and the timing of intervention components, and can provide evidence for what can work in other similar regional cities. A string of communities along the east coast of Queensland such as Cairns, Townsville, Airlie Beach, Mackay, Gladstone, Rockhampton and Bundaberg, may be able to implement elements of the intervention approach proposed in this study.

The approach to measuring incidents of person-to-person violence in the CBD outlined in this study is unique but also needs improvement. The applied research we hope to conduct in parallel with this study will provide us with a way of improving the quality of the data captured, especially in the ED. One way to improve the study is to collect data over a much longer period so that influences of extraneous factors, including seasonal population fluctuations, one-off events or changes to patterns of surveillance and enforcement can be assessed for their impact on the total number of incidents. But, because the study could not be so designed, comparing proportions of 'serious' incidents among the total may be a useful way to compare standardised measures of person-to-person violence at baseline and follow-up. It is hoped that the intervention components when implemented can reduce the overall number of incidents even though the time available for the study does not permit rigorous assessment of such a change.

Since 1998 in Queensland rates of assault have increased from 4.7 percent to 5.8 percent. The issue of alcohol-related violence linked to late night licensed premises is of major public health importance and of considerable community concern in Queensland (LJ&SC 2020), Australia (ABS 2005; Collins & Lapsley 2002) and internationally (Charalambous 2002; Cherpitel 2007). A successful intervention study in Cairns may

ultimately contribute to reducing these heavy burdens and serious risks, improving injury prevention research in Queensland. The results of the study will be published in the international peer-reviewed literature in journals with a moderate to high impact. This may further stimulate international interest in criminological and injury prevention research in Queensland.

## 7. Summary and conclusions

It was necessary to take a community development approach to developing this research. The approach involved close engagement with key community stakeholders, progressive feedback of study results along with mobilisation of community agencies and resources to address a community issue. The role of police in this work has been consistent with police supporting, participating in and contributing to all study components. The results of the scoping studies, which were the objective of this work, are summarised in the following.

### *Repeated measures of assault*

The study has shown that it is feasible to collect data on the number, nature and time of occurrence of an assault in the target area and to do this prospectively in near-to-real time. While improvements in data collection and validation assessments are still required, data from the ED has considerably augmented police data describing violence in this setting. Although the attribution of alcohol to an assault episode is difficult in the kind of routine surveillance approach we have designed, any violence in the LNEP is likely to be influenced by the presence of alcohol in this entertainment economy as it is a ubiquitous risk factor either for perpetrators to carry out violence or for victims to suffer it.

It is well known that ED data provide a better measure of community violence than police data. This is because data are based on individual treatment episodes for the consequences of violence for victims, irrespective of police interactions with the perpetrators of violence. It is also well known that many assaults treated in hospital EDs do not come to police attention. Figure 3.4 in Study 5, indicates very little overlap between incidents prosecuted by police and incidents treated in the ED. While the method does not allow exhaustive identification of such incidents, it appears there is significant potential for police and ED to interact and collaborate to increase the numbers of prosecutions for assault. Focusing on the assaults of a more 'serious' kind, perhaps with a special focus on episodes of injury occurring around closing times and the 3 am 'lockout' from Thursday to Sunday mornings (see Figure 3.9, Study 5), could enhance deterrence and reduce those kinds of incidents happening at those times. The research has demonstrated that it is possible to share information between the ED and police in a way which does not breach confidentiality requirements and which does not put assault victims at further risk.

The study showed the importance of CCTV surveillance and street-based security intervention in particular its ability to respond rapidly to violent episodes, quelling many before they had escalated (see Figure 3.4, Study 5 and Study 6). The study also revealed that police interact regularly with this surveillance system including using camera footage as evidence in prosecutions for crime in the city generally. By examining Figure 3.4, Study 5, it could be anticipated that with no CCTV surveillance and intervention in perhaps 40 percent of violent incidents recorded by CCTV surveillance, the ED and police components of incidents in the total number of incidents would potentially be larger and perhaps have serious consequences.

### *Alcohol availability*

The issue of measuring alcohol availability using opening hours and licensed patron numbers was not a key factor in the study since it did not vary over the course of the research. More important in the thinking of key stakeholders for addressing assault incidents in the LNEP were the localities outside licensed premises that were regarded as dangerous places or pathways (see Study 4). Also clearly important was the movement of people around midnight and around the 3 am 'lockout'. The availability of alcohol from any one or any set of licensed premises appeared to be less of an issue in the minds of key stakeholders except for a very small number of problematic licensed premises where serving practices were frowned upon by liquor accord members generally.

## *Local capacity for collaboration*

The study found considerable capacity for collaboration in Cairns. Collaborative arrangements between key agencies had been in place for some time. This was apparent from interviews and formal consultations conducted with police and emergency medicine department personnel and with relevant local service agencies, including allied health services, local authorities, local interest groups such as victim support groups, local media, liquor licensee representatives and representatives of the jurisdiction's liquor regulatory body (see Section 3). The study found strong capacity and willingness for these agencies to collaborate in the intervention and research processes that have been an outcome of the study (see Section 6). A larger intervention study has been shown to be feasible with the capacity and willingness of emergency medicine departments and relevant local agencies to collaborate in the research and also in intervention components.

## *Addressing the methodological and pragmatic challenges*

### **Treatment priorities in busy EDs are not generally compatible with public health research themes and approaches**

In a public health approach to reducing violence and injury, it is the incidents experienced overall, their number, where and when they occur and other characteristics of interest for designing population level approaches to reduce the number and severity of violent incidents. The challenge of collecting this information was overcome in the ED using a locally-developed computer based tool linked with the existing EDIS that was simple and efficient for clinicians to use. It was vital to deeply engage with ED personnel to give them ownership of the information and to help them understand that the information is useful to the wider stakeholder network aiming to reduce ARAs and could ultimately decrease the workload in ED during peak periods. This study and the clinicians who became involved in it are helping to lead the way in this public health oriented approach.

### **EDs have limited capacities and resources for research**

This study was fortunate to find ED staff with research skills and data management capacities that could support research at the population level. The human resources and other costs required for collecting data outside of the parameters of routinely compiled ED patient information were not a significant concern in this study. The approach used in this study did not need specialist research skills in the ED. However, for research to be based on information collected in the ED in a sustained way, external resources and collaborative approaches between researchers and ED clinicians are required. Routinely collecting data for this kind of research in the ED was found to be possible with minimal or no burden on staff which might detract from patient treatment.

### **Protection of patient confidentiality and information privacy considerations**

The local human research ethics committee accepted and approved the information collection approaches despite the possibility of identifying patients or patrons, and the lack of informed consent from people involved in the incidents recorded. For clinicians, there was the fear that the routine attribution of any behaviours or activities during an incident in which a patient was involved could lead to complaints from patients if they became aware of such a record. These possible repercussions for the ED made the department's management rightfully cautious. However, no ethical or privacy questions have been raised by any ED patient or patron of the LNEP due to discomfort with any aspect of this study.

### **Sharing ED data with enforcement agencies and other relevant stakeholders**

From the point of view of enforcement, unless an ED patient who is a victim of violence makes a complaint then police have few grounds for inquiring about any incident using information from the ED. This study has

not altered this constraint in any way. While ED data may be a better measure of community violence because it deals with the consequences of violence, service agencies in the community with the prevention of violence as their core business remain unable to directly use the ED data we compiled in this study. However, the information now generally available to community agencies because of this study can be used strategically by responsible community agencies to improve their respective service contacts with victims and/or perpetrators of violence.

## **Information is rarely sought in the ED about specific locations of violent incidents**

In a public health approach to reducing violence and injury, where and when incidents occur, who was involved and the environmental characteristics of an incident are useful for designing population level and environmental approaches. A study of incidents occurring in a specific and small area in the city will require very accurate and specific information about the location of the incident and about other happenings around the incident. Validation procedures are required to confirm that an incident is a relevant incident, that is, it occurred in the area of interest, and with as much contextual information describing the incident recorded as possible. Validation of the categorisation of an incident as 'severe' is also required with validation procedures needed for each source of information.

## **Population denominator for calculating rates**

The issues with the population denominator remain. We would be able to compare the incidence rate in one period with the rate in another if, as well as the number of incidents being clearly defined, the population among whom the incidents occur is known for each period. The population in a LNEP changes rapidly over the cycle which everyone is familiar with, that is, between the end of the working week and other times, and also over short periods during any evening as the crowds ebb and flow, making estimates very difficult. In this study, Cairns experienced an economic downturn during 2010 and then a tropical cyclone in the region in February, 2011. These incidents had impacts on visitor numbers and on local people's economic activity with anecdotal reports of a general decline in the late night entertainment economy.

The study design described in Section 6 proposes to use as an outcome measure the proportion of serious incidents compared with all incidents of person-to-person violence recorded over time. The reasoning is that targeted interventions could try to change the nature of violent incidents by lowering the risk of an incident escalating, especially with the resources applied to the issue in Cairns. While less dependent on a precise denominator for comparison over time, and still dependent on good validated ways to count relevant incidents, the social and pragmatic importance of targeting a change in the number of incidents of the more serious kind would need to be balanced against technical purity. In the meantime, progressive data collection as a routine practice provides the opportunity for progressive improvement in the reliability of the information collected, perhaps using continuous quality improvement approaches. Such approaches are feasible in Cairns where we can be confident that targeted action is underpinned by the strong local collaboration.

## Afterword

### *Since this report was completed an intervention trial has been established in Cairns*

This trial has two components.

- A combined outcome and process evaluation of a trial which compares the proportion of serious incidents recorded during the three months April, May and June 2010, with the three months April, May and June 2011. The Queensland Injury Prevention Council is funding this component.
- A participatory action approach to sustaining and embedding local intervention strategies developed and applied during the trial. The Alcohol Education and Research Foundation is funding this component.

The trial is due to be completed by September 2011. Raw data has been provided for a total of 629 incidents. The data are being sorted for analysis and coding at the time this report was written. Semi-structured interviews with the key stakeholder groups interviewed at baseline are being conducted. Intervention components, both evidence-based and locally-designed, are being encouraged and monitored.



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The background of the page is an abstract geometric pattern composed of squares in various shades of blue, white, and grey. The pattern is arranged in a grid-like fashion, with some squares being solid colors and others containing the word "Appendices" in white text. The overall design is modern and minimalist.

# Appendices

## Appendix A—Training requirements for a new licence

To qualify for an unrestricted crowd controller licence in Queensland, the following competency units from the National Asset Security Training Package must be successfully completed.

PRSSO210A or CPPSEC2011A—Control access to and exit from premises

PRSSO211A or CPPSEC2012A—Monitor and control individual and crowd behaviour

PRSSO215A or CPPSEC2014A—Operate basic security equipment

PRSSO216A or CPPSEC2015A—Patrol premises

PRSSO303A or CPPSEC3003A—Determine response to security risk situation

PRSSO305A or CPPSEC3002A—Manage conflict through negotiation (TR)

PRSSO309A or CPPSEC3007A—Maintain security of environment

PRSSO316A or CPPSEC3013A—Control persons using empty hand techniques (TR)

HLTFA301B—Apply first aid (TR) or Senior first aid (Workplace Level 2) (TR)

PRSSO201A or CPPSEC2001A—Communicate effectively in the security industry OR

PRSSO301A or CPPSEC3005A—Prepare and present security documentation and reports

PRSSO202A—Maintain workplace safety or CPPSEC2002A—Follow workplace safety procedures in the security industry OR

PRSSO302A—Maintain a safe workplace and environment or CPPSEC3001A Maintain workplace safety in the security industry

PRSSO203A or CPPSEC2003A—Work effectively in the security industry OR

PRSSO307A—Manage own performance and development or BSBCMN302A or BSBWOR301A—Organise personal work priorities and development

PRSSO204A—Work as part of a team or CPPSEC2005A—Work as part of a security team OR

BSBFLM302A—Support leadership in the workplace or BSBFLM303B or BSBFLM303C—Contribute to effective workplace relationships

PRSSO205A—Provide security services to customer or CPPSEC2006A—Provide security services to clients

OR PRSSO308A or CPPSEC3006A—Coordinate a quality security service to customers

Source: Office of Fair Trading (2011).



# Appendix B—Available abstracts

## Study 2

*An exploratory study of the occurrence and severity of injury due to assault in a tropical tourist town in Far North Queensland, Australia.*

### Objective

Alcohol-fuelled violence in the central business district is the current target of government campaigns. Assaults are under-reported to police, resulting in incomplete statistics. ED data is an alternative method of surveillance. This retrospective study collected ED data to describe the patterns of assaults presenting to CBH in Far North Queensland.

### Methods

Records were examined for patients who had been assaulted and presented to Cairns Base emergency between 1 July and 31 December 2009. Information collected included patient demographics and characteristics of assault.

### Results

A total of 548 patients (390 males, 158 females) presented as a result of assault. Of these, 27% (45 males, 10 females) were assaulted in the Central Business District, while 64% (84 males, 46 females) were assaulted in Cairns suburbs. Half (51% = 47/92) of the assaults on females occurred in private residences and 65% (69 males, 95 females) knew their assailant. A total of 59% of presentations occurred at the weekend. Although the peak presentation time for males was between 11 pm and 5 am, females tended to present throughout the day. Most presentations by men (n=253) and women (n=97) involved alcohol, although women (n=130) were more likely than men (n=277) to have previous alcohol or assault related presentations (OR=1.9, 1.3-3.0, P=0.007).

### Conclusion

Clear differences in the characteristics of violence perpetrated on males and females exist. Both sexes are more likely to be assaulted in the suburbs, while intoxicated, by a known assailant. Possible assault reduction interventions include targeting troubled suburbs, gender specific campaigns, and brief ED interventions.

## Study 4

*Defining the LNEP and possible strategies for reducing alcohol-related assault: an example using a community-based methodology in Cairns, North Queensland (Australia).*

### Introduction and aims

The objectives of this exploratory research were to: (1) identify the boundaries and context of the LNEP in Cairns and its characteristics to more accurately measure alcohol-related assaults, (2) assess stakeholder perceptions regarding interventions to reduce these assaults in the precinct, and (3) explore the contribution this process could make to embedding sustainable interventions.

## Design and methods

These involved: i) 29 semi-structured interviews incorporating cognitive mapping techniques, ii) 12 focus groups with key service providers, and iii) community-action research to feedback preliminary findings and reflect veracity.

## Results

Those interviewed generally agreed on the boundary of an area in the Cairns CBD but drew attention to more dangerous locations, particularly nodes of intersecting pedestrian traffic and egress routes where patrons return on foot to visitor accommodation. A range of interventions is already in place in Cairns with responsible service of alcohol and combined enforcement operations recognised as important. Education and community awareness-raising happens regularly, a community safety forum and liquor accord are prominent, with the role of CCTV surveillance and a secure taxi rank also prominent in stakeholders minds. There is consensus that the LNEP is comparatively safe, although some of those interviewed who had arrived in Cairns more recently had the opposite view. Optimism that agencies will continue to work together remains high.

## Discussion and conclusions

A view existed that the violence in Cairns in the late night economy had changed over the years, becoming less predictable. The view was expressed that shortening trading hours, tighter enforcement of responsible service of alcohol provisions and reducing alcohol availability through shorter trading hours would further reduce violence. Interviewees also recognised, however, that patrons could be intoxicated before arriving in the city and generally the culture of 'drinking to get drunk' was a pervasive influence. Current government programs to address alcohol-related violence across Queensland were viewed favourably.

## Key words

Violence, assaultive behaviour, alcohol-related injury, methods, qualitative research

## Study 5

***The 'Cairns model': compiling information prospectively about violent incidents and the role of alcohol in the LNEP in a regional centre in Far North Queensland (Australia).***

## Introduction and aims

The paper reports an exploratory study of methods to compile routinely collected data describing person-to-person violence in a LNEP. It examines the utility of data collected from the ED, QPS, venue security and a CCTV surveillance system in a regional city in North Queensland.

## Design and methods

For the LNEP in a tourist city of 164,000 people near the Great Barrier Reef, de-identified data describing incidents or person-to-person violence were recorded during three months (April, May and June, 2010). In the ED, clinicians and triage nurses flagged incidents believed to have happened in the LNEP, QPS provided data on alcohol-related assault, CCTV camera room operators described incidents of concern and venue security reported incidents from registers on licensed premises. Incidents were described as 'serious' if: any fracture was recorded in ED reports, there was a blow to the head or neck noted in ED reports or in CCTV or venue security information, or if a charge of 'serious assault' or 'assault occasioning bodily harm' was laid by QPS.

## Results

None of the people involved in the observed incidents died. For the 90 days for which data were recorded during April, May and June 2010, 384 incidents were recorded, an average of 4.3 per day (SD=2.7, range 1 to 11). No days were free of incidents during this period. Two-thirds (68.5%=263/384) of all incidents involved males only and around one quarter (24.2%=93/384) involved females only while 7 percent (=28/384) involved both. For the 92 'serious' incidents recorded, the respective proportions were similar: males 68.5 percent (=63/92), females 31.5 percent (=29/92) and both 1.1 percent (=1/92). The distribution of the occurrence of incidents during the week was bi-modal with, as expected, the highest number occurring on Saturday–Sunday with similarly high numbers on Sunday–Monday and a subsidiary peak on Thursday–Friday. Consistent with local understandings, the number of incidents increased steadily from around 7 pm to a first peak in the two hours before midnight. This was followed by another peak for all incidents recorded in the hour before 3 am and in the hour from 3 am up to 4 am, that is, around the 'lock out'.

## Discussion and conclusions

The results captured by the surveillance tool are consistent with local understandings and experiences and with the published evidence. This makes the tool potentially useful for monitoring and evaluating the effects of targeted intervention strategies if methodological shortcomings can be addressed. These include: improved consistency in incident definition especially the description of 'serious' incidents which are likely to be more significant from a social viewpoint and also for persons suffering these injuries, and developing reliable indicators of the denominator, that is, the population 'at risk' of experiencing an incident in the LNEP.

### Key words:

Alcohol, night-time economy, surveillance, injury, intervention

## Study 6

### ***The role of an open-space CCTV system in limiting alcohol-related assault incidents and injuries in a LNEP in a tropical Queensland city (Australia).***

CCTV systems that incorporate real-time communication links between camera room operators and security on-the-ground may limit injuries resulting from alcohol-related assault. This pilot study examined CCTV footage and operator records of security responses for two periods totalling 22 days in 2010–11 when 30 alcohol-related assaults were recorded. Semi-structured discussions were conducted with camera room operators during 18 hours of observation. Camera operators were proactive, efficiently directing street security to assault incidents. The system intervened in 40 percent (n=12) of alcohol-related assaults limiting possible injury. This included three incidents judged as potentially preventable. A further five (17%) assault incidents were also judged as potentially preventable, while 43 percent (n=13) happened too quickly for intervention. Case studies describe security intervention in each category. Further research is recommended particularly to evaluate the effects on preventing injuries of targeted awareness training to improve responsiveness and enhance the preventative capacity of similar CCTV systems.

## Study 7

### ***Strategic and operational good practice for private security in a night-time economy, the example of Cairns in Far North Queensland (Australia).***

Private security personnel are the guardians of patrons in the NTE, however, there is a disconcerting lack of research concerning security issues specific to the NTE, such as: duty of care, risk management approach to

staff and patron care, code of conduct, interactions with other service agencies, data and information sharing, incident reporting and functions and resource procedures for security personnel. There is also little research concerning the ability of security personnel to contribute to reducing alcohol-related harm and injury in the NTE through strategic and operational good practices. This article compares documented research literature to these aforementioned practices to the security personnel's Cairns City model. Future directions and recommendations are discussed.

### **Key Words**

Private security; security industry; model of good practice; security training; roles and responsibility.



